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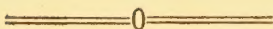
P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

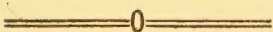
Dr. Frederick Evis, Secretary.



VOLUME IX

Tuesday, October 11th, 1955.

San Francisco, California.



R. C. Sturgen,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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N I N T H D A Y

San Francisco, California,
Tuesday, October 11th, 1955,
9:30 o'clock, a.m.

- - - - -

The further proceedings of this Committee
reconvened pursuant to adjournment.

Mr. A. H. Cowling, Chairman,
 Presiding.

PRESENT:

Messrs. Elliott,
 Brandon, Q.C.,
 Murdoch,
 Gordon,
 Thomas (Oshawa),

Dr. Frederick Evis, Secretary.

APPEARANCES:

Mr. H. Belyea,	Division of Industrial Hygiene, Department of Health, Ontario.
Mr. Dale A. Hutchison,	Manager, Air Pollution Laboratories, Stanford Research Institute.
Dr. O. F. Senn,	Chairman of the Chemical Department, Stanford Research Institute.
Mr. K. E. Lunde,	Manager, Industrial Air Research, Stanford Research Institute.

Dr. R. D. Cadle, Manager, Chemical Physics
 Section, Stanford Research
 Institute.

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D A L E A . H U T C H I S O N ,

Manager, Air Pollution Laboratories, Stanford Research
Institute, appearing before the Committee, but not
being sworn, deposes and says:

MR. HUTCHISON: Actually, gentlemen, in
this area, the fall is probably the best time of the
year. We have some nice days, and warmer, with less
wind. Very seldom have we what we call here "high
fog", with the mornings overcast, which frequently
occurs in the summer and does not turn off until
about nine or ten o'clock in the morning.

 In San Francisco, August is usually the
coldest month, because the month of August in San
Francisco is usually overcast, and they have high
winds, which blow off the cold coastal water, which
can be quite unpleasant.

 Frequently it will be warmer in October,
and even in January and February sometimes, than it
is in August.

 We get our rain between the first of December
and the first of March.

BY MR. ELLIOTT:

Q. So you do have wet days?

A. Yes. Our average rainfall is about 15 inches.

BY MR. THOMAS (Oshawa):

Q. In Los Angeles, they told us 8 inches.

A. That is right; it is a little drier.

BY MR. ELLIOTT:

Q. It is about double here?

DOCTOR SENN: Across the mountains, it goes up to about 55.

MR. LUNDE: Generally, the higher elevation, the more rainfall.

THE WITNESS: How can we help you gentlemen?

BY THE CHAIRMAN:

Q. Maybe you could tell us a little about what you are doing here.

A. Let me tell you a little bit about the Stanford Research Institute, if I may.

Q. Yes, certainly.

A. The organization started in the fall of 1946, and this organization -- which is separate from Stanford University, although the President of the University is Chairman of our Board of Directors, and our Board of Directors are all elected by the

Board of Trustees in the University, but that is the only tie-up between the two organizations. We have our own staff which is completely separate from the University, We use some University staff members as consultants, but we have to get approval to use them as consultants, the same as any organization.

We are a non-profit organization, and have expanded from -- I think it started with two employees in 1946, and we have something over 1,100 now.

We are divided into essentially four divisions.

We have our Industrial Economic Division, which is a group which has been doing studies on problems in industrial plant locations, and product diversification and some social science studies, and that general type of thing.

We have our Engineering Division which is the largest Division in the Institute, and they are carrying out their activities primarily in problems of electronics. They have worked with an antenna system, a radiation system, meaning radio radiation within a general field.

They have just now completed what is known here as "IRMA", which is an automatic device for handling accounts for the Bank of America, which is an elaborate system, which writes cheques, and subtracts

the amount of the cheque from your account, and if it makes it overdrawn, they perhaps may even reject the cheque. I am not sure of that, however.

Then we have the Paulter Laboratory, which is doing work in connection with shock waves, and other work in that general field.

Then we have our Physical Science Division, which is composed of four departments now, the Department of Applied Biology, the Chemistry Department, the Physics Department, and the Department of Chemical Physics.

Now, all of our air pollution activities have been carried out in the Chemistry Department. The Chemistry Department is also handling the physics, and scientific chemistry and organic chemistry, and chemical meteorological engineering, air-pollution studies and problems of atmospheric pollution.

The physics department has been associated with the shock waves and concerned with shock phenomena, and they have been connected with a number of atomic bomb tests. They are concerned primarily with the solid-state physics, and they have a sonic group, and so forth.

The biological division has been doing work in toxicology essentially, and our department of Chemical Physics, which is just a new group, is

concerned with problems of combustion, the problem of electric phenomena, solids, and various other physic phenomena, and so forth.

This is merely a rough, thumb-nail sketch of the Institute's activities.

In our air research activities, we have been -- and this is perhaps the programme which has been carried on longer at the Institute than any other single programme. It started in 1947, with the Los Angeles smog problem.

We were employed by the Western Oil and Gas Association, and have worked on the smog problem ever since that time.

In addition to that, we have carried out many other studies in problems of air pollution.

We have carried out studies of the SO_2 , and fluoride emissions, soda ash emissions and damage to vegetation. We have also carried out studies on the formation of ice and fog in Alaska, and we have had several government contracts, some of which are classified.

We have worked with the Airforce; we have worked with the Chemical Corporation, and we have worked with the Department of the Navy.

I think those are the main governmental

agencies for whom we have worked.

BY THE CHAIRMAN:

Q. Do you get any funds from the state of California?

A. We have carried out two studies at the Institute for the state of California. They were both for the Department of Public Health.

One was a study concerning the data reduction project essentially. It was a survey we were carrying on in Los Angeles for the Air Pollution Office, in which we registered the data we had sent to all our stations, and this was turned over to the Department of Public Health.

Then there is a study being carried on by our Social Science group, on the effects of eye irritation on primary school children.

MR. LUNDE: We get no general subsidies from the state of California. All our income is from direct contacts.

BY MR. THOMAS (Oshawa):

Q. Do you not get any assistance from industry at all?

MR. LUNDE: It is an associate plan.

THE WITNESS: We have an associate plan which is a unit, and the unit is \$15,000 for a period of

three years.

This is a contribution from industry and supports research on the West Coast, essentially.

This money is used for a number of things. It is used for some of our publications which we prepare, and it is also used for research which we sponsor ourselves, and it is used sometimes for equipment, and developments of that type.

BY MR. MURDOCH:

Q. In addition, is there a special fee for a special project?

A. All of our work is done on a contract basis. We have no endowments, whatsoever.

BY THE CHAIRMAN:

Q. To get back to this smog situation; do you feel the studies you have made on behalf of the Foundation and so forth, have materially assisted in those problems in California?

A. We definitely think so. The biggest part of the problem in California is that it is a unique situation, as you have probably been told many times before now. But most of the problems, prior to the ones in Los Angeles, were ones of a specific industry, for a specific period.

The famous Trail problem on SO₂, and the

Selby problem, which was another problem on SO₂, are notable.

Down there, there was a unique situation, of which the first part was blamed on the oil companies, and their research in part was public relations and also in part to find out what really the problem was.

Certainly the thing which I think has been contributing most is that the Los Angeles situation is a very complex one, in which you have reactions occurring in the atmosphere, and reactions of materials which have been added, which are in exceptionally low concentration, which makes it most difficult to measure, and also that these bulletins (indicating) are used by a host of sources in which the public is one of the big contributors.

You can find any sort of figures you want when speaking of the range of contributions, but the one we use most frequently is 60 and 40 -- 60 percent. contribution from the public and 40 percent. from industry. Some say it is 70 and 30; some say it is 50 and 50, but we think it is safe to say it is not less than 50 percent. and probably not more than 70 percent.

BY THE CHAIRMAN:

Q. How do you mean the "public specifically"?

What was their contribution?

A. Their contribution is in the problem of automobiles, and it is in the problem of the incinerators they use. That is essentially what we mean by "public contribution". The incinerators have been banned down there now, but they do not have municipal incinerators, so they are still using them.

Q. They have extended them for another two years.

A. Yes.

Q. The people to whom we spoke indicated that about 50 percent. of the total pollution in the Los Angeles area came from the automobiles. Would that seem to be about right?

A. That is pretty close to right.

Q. The incinerators are not as big a contributor--

A. Of course, we have a horrible time defining "pollution". One of the reasons is that the incinerators probably produce more particulate material which tends to reduce visibility, than the automobiles, for example, but certainly the automobiles contribute many times the organic material than the incinerators, even though the incinerators are quite inefficient.

BY MR. BRANDON, Q.C.:

Q. Would a municipal incinerator be of any help,

in your opinion?

A. Oh, yes. They operate these confounded incinerators with low temperatures, and they load them with wood and with huge containers that glass comes in and paper, and anything else that is combustible. They are most frequently an old barrel in the back yard and the stuff just stays there and smoulders, and does not give you a good, high-temperature combustion where you would burn up most of your heavier hydrocarbons.

Q. Such as --

A. A large incinerator has a very good temperature control, and gets the maximum combustion. You have essentially no temperature control with the backyard incinerators, you just dump the stuff in and burn it.

Q. Has the backyard incinerator always existed in Los Angeles?

A. Yes.

Q. We were told there were two municipal incinerators which were partially constructed, but never used.

A. There were two which were never given the blessing of the Los Angeles Air Pollution Control District.

Q. We are told they did not meet the requirements of the Air Pollution Board in Los Angeles, and were constructed somewhere in the neighborhood of eighteen or twenty years ago.

A. That is right.

BY MR. THOMAS (Oshawa):

Q. And were never completed, because the Council would not approve the contract?

A. That is right. I am not sure of this, but I think it is the fly ash problem.

BY MR. BRANDON, Q.C.:

Q. Do you think that part of the Los Angeles problem could be terminated with the adoption of a municipal incinerator system?

A. Certainly.

Q. In regard to the matter of diesel trucks on the one hand as compared with the ordinary automobile as used by the average individual citizen, what is your opinion as to the amount contributed by the diesel trucks?

In asking that question, may I make one observation? In Ontario, we have a considerable number of diesel trucks, but they are unit trucks. What I mean by that is, they are tractor units, plus trailer units, as compared with what you have here,

with a tractor-trailer unit, and then another trailer.

A. Yes.

Q. These units would appear to draw double the load of the diesel unit which we have in Ontario.

Am I right in asking you to bear in mind the double-load haul of the tractor-trailers here as compared with what we have in Ontario?

A. Actually, the contribution of the diesels in Los Angeles does not amount to very much, because of the small amount of fuel which is burned, as compared with the fuel burned in an automobile.

The last figure I have is that five million gallons of gasoline are burned every day in Los Angeles, in the automobiles. And I think that is probably a little low, because I am sure the automobile population has increased, and also the traffic congestion has increased, and that all adds to it.

The diesel units in the bus system down there, I believe, have a catalytic unit, which is working quite effectively.

MR. LUNDE: We tried to include this contribution by the diesel trucks in our studies of the smog, and we found that it was negligible. It was less than one-tenth of 1 percent.

THE WITNESS: We did this on the basis of taking the amount of diesel fuel sold in Los Angeles County during a year.

THE CHAIRMAN: This confirms the information we have that in the area, actually the diesel smoke or fumes at the present time do not present much of a problem.

MR. LUNDE: In Los Angeles County, they have had for many years, very strict ordinances as to the way in which diesel trucks can be operated. So, while on the open highway, you will see these things pouring out a tremendous quantity of black smoke, they have never been permitted to do that in the cities, so they have been operating under different conditions.

THE WITNESS: They discouraged it by a system of fines.

MR. LUNDE: Inherently, a diesel engine is not as dangerous, but it can be operated improperly. If a diesel engine is operated properly, its efficiency is on the order of two or three times that of the other engines.

MR. ELLIOTT: They are burning too much fuel or oil, one or the other?

MR. LUNDE: Yes.

THE WITNESS: They are closely checked by the

cities.

BY THE CHAIRMAN:

Q. Our problem at home is not just the same as yours. We are mainly concerned with black smoke, soot, and fly ash. Our buildings are not as clean as yours. I do not know about the washings, as I have not noticed any on the lines here, but in the industrial areas of our cities, washings get pretty dirty and greasy from this smoke.

We also understand you do not burn any coal in California at all?

A. That is right.

Q. Would you like to comment on that situation?

A. Our heating out here; in the first place, it does not require too much heating, and practically all of the heating units -- I would say nearly 90 percent. -- are gas fired.

Q. Natural gas?

A. Yes, and the rest are oil fired.

There have been studies made at the Armour Research Foundation in Chicago, some studies of the exhausts from gas-fired furnaces, home furnaces, and home hot water heaters at normal operating conditions, but they were not able to find any hydrocarbon exhausting from these heating units. It was not until

they got the thing to operating very efficiently with a minimum of air, that they were able to get hydrocarbons in the exhausts from these furnaces.

So the new heating units contribute nothing out here. Usually they contribute oxides of nitrogen, and that has become important in the air pollution problem.

BY THE CHAIRMAN:

Q. What is that?

A. This, in general, is our thinking of the situation now.

You see, Los Angeles is unique in that it has a high oxidant content.

As you know, scientists are always searching, but in making any statement, we must all think of the ozone. You may have noticed a very acrid odour when they had the smog attack in Los Angeles, and it was irritating to the nasal passages. It is essentially ozone, and the reactions which occur down here are negligible. Sunlight reacts with these pollutants in the atmosphere, and thereby forms other products.

One of the products that it forms is ozone, and the reason we say that the oxides of nitrogen are so important and we have to think of the negligible

factors, in other words, they are the interceptors of the sun light energy. It can react on oxygen and the ozone can react on hydrocarbons in the atmosphere, and that forms the peroxides. We have not found them yet, but we think that is it. So we think the problem down there is one mainly of removing the hydrocarbon, whereas we formerly thought it was mainly a case of the removal of the olefins.

This was all fine, except you can never remove all of these things. You can remove 90 percent., but to attempt to remove 90 percent. of the remaining 10 percent. is most difficult, and very expensive, and we think the oxides of nitrogen are playing an important role in this, and these are contributed by any high-temperature combustion, whether it be from home heating plants, hot water heaters or automobiles. Wherever you have high temperature, it will form oxides of nitrogen.

Then we are getting to our problem that it is not any one which can be removed from Los Angeles, but it must be more than one.

BY MR. ELLIOTT:

Q. In the municipality I happen to come from -- the city of Hamilton -- the home heating problem used to be 95 percent. coal; today it is very close to 90

or 95 percent. oil; in other words, they made a complete switch in about ten years. And the same thing applies to industry.

The complaint in regard to oil heating is they do not have all that smoke coming out of their chimneys, but they think the gas is more injurious than the smoke they were getting from the old coal firing.

THE CHAIRMAN: Hamilton is a city of about 225,000, and these furnaces would have to be on for perhaps eight months of the year.

MR. LUNDE: I see how that could be. However, I am not familiar with the situation up there.

BY MR. ELLIOTT:

Q. One other thing: we have had complaints about this -- and I do not know whether it is imagination or what; nobody has been able to tell me whether it is or not -- but some people think by burning oil in the homes it creates fumes in the houses, and there was a coating on the windows and walls from the oil burning. They feel there is smoke in their own homes from their own oil fires.

A. That may be true, but you can go further than that. For instance, in connection with burning natural gas, for example. They added an odorant to

the gas, so you can detect it if the gas is out.

It is changed from H_2O to H_2S , and you find in burning natural gas, if you leave the silver out, it will get black.

BY MR. THOMAS (Oshawa):

Q. Is that not a problem of faulty installation?

A. If the thing is air-proof, there is no possibility of the fumes leaking out through the air ducts, and I would say if this manifests itself, they were getting faulty installations.

I do not think you can get installations which will keep it all out. Look at the windows. During the summer months, when you have only a little heat, you may find they are coated with particles of materials.

Q. They introduced the all-welded furnace, and it was apparently foolproof, and nothing could come through there.

MR. ELLIOTT: The majority were hot air furnaces.

MR. THOMAS (Oshawa): The same thing would apply.

MR. ELLIOTT: They claim they can feel a sort of dampness. I do, even in my own house, and I have a very good heating plant.

You find you have to have about 75 degrees to heat from oil, whereas with coal you can heat at about 70 degrees.

MR. LUNDE: It is possible in a region where there is a substantial number of people, that the combustion of oil will raise the humidity generally more than would be the case in the combustion of coal, simply because there is more hydrogen, and water vapour.

This would have no bearing necessarily on the film of oil or smoke, or anything of that sort.

THE WITNESS: This, plus the fact that in the period when you were going from coal to oil, you increased the population, so there is more combustion going on from the heating of more homes.

This is exactly the situation we found in Alaska, which caused the ice fog to form. You only found it in areas with high population densities which were burning a great deal of fuel, and it was very difficult. You had inversion, and it did not escape, but stayed near the ground, and eventually would form small ice crystals which remained in suspension in the ice, forming the fog.

BY MR. ELLIOTT:

Q. Do you feel also that this contributes anything to the smog problem, the same as the exhaust

from the automobiles, which you cannot see?

A. Sure you can, because you have added a tremendous number of them.

Q. Increasing the gases from the automobiles?

A. Sure.

Q. And the automobiles and the other gases could become a problem?

A. Yes.

Q. When you get them together -- supposing they are burning coal in a big office building, and the three gases get together, have you any proof of what they would turn into if they came to the saturation point, that is, gas from the oil fired furnaces, plus the automobiles, plus the gases from coal fires?

If the three of them got together, would that not result in allowing the smoke to hang, say, at about roof-top level?

MR. LUNDE: I was going to say that even a fairly poor home furnace would be nowhere near as bad as the automobiles.

MR. ELLIOTT: It would not?

MR. LUNDE: No.

MR. ELLIOTT: We have had smoke from the manufacturing area, probably two or three miles away.

Our Hamilton officers feel -- but they have

no proof -- that it is a combination of three gases under certain atmospheric conditions, makes the smoke we have had entirely different. And it would be as black as the ace of spades.

MR. LUNDE: What are they looking for? You say the Health Officers say that it might be the effect of a combination?

MR. ELLIOTT: Yes.

MR. LUNDE: What are the physiological properties?

MR. ELLIOTT: We only had it about fifteen or twenty minutes at a time, but it was very bad, and your faces would almost turn black by going through two or three blocks of it.

THE WITNESS: Was there any odour associated with it?

MR. ELLIOTT: The odour is not too bad, but it has a tendency to set up a certain condition. For instance, your shirt would turn black.

THE WITNESS: Any eye irritation or nose irritation?

MR. ELLIOTT: Not too much. Usually you take a handkerchief and cover your nose, like that (indicating). We have not had enough to affect anybody very badly. Twenty minutes would be about

the most. It has been very bad in that time, and if it were to last several days, God knows what would happen.

THE WITNESS: It sounds like it might be an oil soot. If you have had oil soot associated with it, you might find that you could flick it off, but it leaves a big black smudge.

MR. ELLIOTT: That is right. It hangs in the air like drops. I have seen it myself.

MR. LUNDE: What type of equipment do you use?

MR. ELLIOTT: There are a thousand makes, but they are all home types. They do not use any water. Some of the old ones used water.

THE WITNESS: What kind of oil do you burn in the homes?

MR. ELLIOTT: This is crude oil.

THE WITNESS: It was not one like some industries burning some bunker fuel. It is very heavy, and it has to be heated in order to flow at those temperatures. That is the type of thing from which you might get your oil soot.

BY MR. THOMAS (Oshawa):

Q. Have you any requests from the automobile industry for any studies?

A. The automobile industry started some work in Detroit. They first became interested in the problem in February, 1954, and by last January had carried out quite a bit of research.

The A.M.A. -- the Automobile Manufacturers Association -- did contribute some money to the Air Pollution Foundation in Los Angeles.

In addition to that, the Ford Motor Company, the Chrysler Corporation, and the General Motors -- I am not sure whether that is all at the moment -- are carrying out research in their own laboratories as to how to reduce the emission of hydrocarbon from the exhaust gases, and to get better combustion. They are working on their carburetion system mainly.

The Hudson Catalyst Company in New York has done some work on catalysts, and thereby getting complete combustion.

These were tested out last year down at the Southwest Research Institute in Texas, but they found it was not yet ready for the market at that time.

Q. Do you think their approach is a little different than the one the Foundation might have? They are mainly concerned with the conservation of fuel, thinking that the particular type of automobile

they produce might be more saleable than those of their competitors?

A. No, they were trying to reduce the emissions. They had two techniques which they are using at the present time.

The worst emission is from the decelerating condition. There you are burning a very rich mixture, because your air is practically shut off.

One company approached it on the basis of cutting off the supply when decelerating, and cutting back in again when accelerating. That was one approach.

The other approach is to bleed air into the intake manifold, when the vacuum goes up beyond a certain point, so you keep the air ratio about constant, and get better combustion in the automobile.

But an automobile operates best on a ratio mixture idling of about 14 to 1, and the usual automobile is equipped to operate at about 11 or 12 to 1 at the best. Some of them are not that high. But the automotive industry is attacking this problem, and is trying to remove these things rather than obtain fuel economy.

MR. LUNDE: One of the questions about this smoke you mention is that it happens on days when it

gets a little colder.

MR. ELLIOTT: That is right. When the air was running low, the temperature would be probably around 35 or 40.

MR. LUNDE: It is possible that the oil furnace is primarily responsible, because there is some lag between the time it takes to shut the furnace off, and the time the oil actually goes out.

MR. ELLIOTT: February was the month when it happened in both cases. February is considered our most difficult month, but in the last three or four years it has not been. We have not had a zero day in February in the last three or four years.

MR. LUNDE: Yes, every year there is the possibility of the unburned vapours going into the air, and if the furnace is not operating pretty much continuously, it might not occur.

MR. ELLIOTT: But oil fires could be a real contributor?

MR. LUNDE: Oh, yes.

MR. ELLIOTT: Our Health Officer feels the same as you do. It was at that time of the year when they would be burning, although it was not a bitterly cold day.

It was one of the days when the dampness

seems to hold the air still, and you need more heat. The dampness is perhaps a more important factor than during a bitter cold spell.

Our Health Officer feels the oil fire was quite a contributor to our problem, that is, in the private homes.

MR. LUNDE: It is a question of its burning off, ordinarily.

MR. ELLIOTT: That is right. When it was real cold, they were not having too much difficulty, when the fires are on practically all the time.

But when they are on and off, there is no doubt but what some difficulty occurs.

MR. LUNDE: When we say the problem is attributable to fog, may I say that in Los Angeles they have the eye irritation and the plant damage, and I think it is probably true that it is unlikely you would expect a variation of the concentration of hydrocarbons in these operations.

Then you were talking about something quite different from anything which we have here, that is, the decreased visibility, and possibly these drops form right at the furnace, and are affected by the micro-meteorological effect.

I will admit it is a tough problem.

MR. ELLIOTT: This is something you can actually see.

THE CHAIRMAN: We have a nice, clean snow-fall, and in a short time it is covered with this dirt.

MR. ELLIOTT: That is what I was going to say. In my town, you may have a fall of snow of three or four inches, and when you look at the snow the next day, it is a dirty black, while up in the country, perhaps only three or four miles away, it is white as driven snow.

Within three or four hours, city snow will colour itself to a point where it is almost brown.

MR. LUNDE: That is typical of the coal-burning stoves in the west.

MR. ELLIOTT: But the snow is one of the greatest telltales I have ever seen. Some people claim the snow comes down, and as it does, it cleans the air.

THE WITNESS: We hope that it does, but so far, when we have a snow storm coming, we have a new air mass moving across the area, so there is a completely clean air mass coming in right behind the snow.

BY DOCTOR EVIS (Secretary):

Q. Would you say something about your work on

vegetation damage?

A. Yes. The Los Angeles smog -- after studying this for quite a while, we decided we could not define it, to tell what the different manifestations were. One is the reduced visibility; another is irritation to the eyes and mucus membranes.

Then there is the characteristic odour. But the thing which actually becomes smog, and probably was one of the first things which was met, was the damage to vegetation in the area.

The vegetation which was damaged was the leafy vegetation growth, such as spinach, lettuce, beets and so forth.

Surprisingly enough, agriculture is still the largest industry in Los Angeles County, so it is becoming a very real problem, and there have been a number of estimates made as to the amount of loss which has been suffered as a result of the smog out there. It has been estimated to be up in the millions of dollars. I think I saw one figure of \$2 million, at one time.

This was characteristic smog, but nothing had ever been done in regard to the vegetation, and it had never been seen any place else. It was first noticed in 1946, I believe, -- no, it was not either; it

was in 1945, when it was first reported, and the problem there is that it makes these leafy vegetables unsaleable, in that they will not bring top prices, and in very bad smog attacks, they will actually die and curl up, and become what the plant people call "necrotic". They will have dead tissue in the leaves, and they do not even harvest them.

Therefore, this required some experimental work, and they found they could reproduce this same type of damage by reacting ozone with an unsaturated hydrocarbon in a greenhouse. There has been a great deal of work done on that.

There has also been work done on the automobile exhausting ozone out, and these two together produce a characteristic damage.

There has been some work done on adding oxide of nitrogen to unsaturated hydrocarbon, and rotating it, and it will produce this type of damage. But this type of damage was only found where you had the unsaturated hydrocarbon reacting with something else. You cannot get it by fumigating it with any other material.

From this we also know there were certain weeds which were very sensitive to smog damage as well.

As a result of this and the other work we

have done, we studied the responses of vegetation to the SO_2 , and other oxides, and the non-response of other vegetation and fluorides, and we hit upon the idea of studying the effect on some weeds. The reason was, because if you go to different parts of the country, you will find they are growing different types of plants.

Some farmers will fertilize very heavily, and sometimes this causes a certain amount of damage, if you have ammonia, for example, but you have different varieties, some of which are very sensitive, and some are quite resistant. So we decided that the study of weeds was one of the best things we could do, that is, to use the weeds, so we found ten varieties of weeds which are found throughout the United States.

These weeds we felt were going to be quite useful, because if we had a suspected problem of air pollution, we could go out and examine the weeds in the area, and they would have, perhaps, the same cultures produced, with perhaps the same fertilization in the area, and if we could get information about them, it would tell us the relative sensitivity of the different weeds, and also give us some idea of the types of smog which were occurring, and the effect on these different materials, and we feel we

are getting a bit ahead. It turned out very well, as a matter of fact.

We found, for example -- and I am not sure I can give you this exactly right at the moment -- but we found that one flower might be very sensitive to SO₂, for example, sulphurdioxide, while a dandelion would be relatively non-sensitive to sulphurdioxide, but on the other hand, it might be very sensitive to ammonia, while a sunflower, for example, was quite resistant. That is what we found.

This was set up primarily as a problem of surveying, in which we could go to an area where you had a suspected pollution problem, and examine the weeds, and find out which have been marked, how they were marked, and which were marked worse than others, and this would give us some idea of the sensitivity to a number of pollutants, and which would give us also some idea of the concentration which might be released into the area.

Q. Did you have any evidence to show that there might be a sub-acute effect on the plants? For example, the releasing might not affect some, but, at the other extreme, it might be noticeable.

Was there anything in between where the fruit was smaller, or the plants were smaller?

A. There is what they call "hidden damage", but the state of our knowledge at the moment is such that no one is at all sure of it. There are those who maintain there is, and some maintain there is not. They have made studies of orange groves in Orange County and in San Bernadino, and they can find no evidence of what the reduction in the production of the groves is, as a result of smog.

Q. Does the smog get on to the groves?

BY MR. ELLIOTT:

Q. The fruit is affected just as well as the vegetables?

A. No, the vegetables are subject to smog, for instance, the leafy vegetables, such as spinach, endives, beets, and so forth.

BY THE CHAIRMAN:

Q. I think one of the things in which we are all interested, and it is a broad question you might care to answer, or some of your colleagues, Mr. Hutchison.

We understand that a real active programme has been going on in Los Angeles County -- and perhaps here -- since about 1947, and somewhere in the neighborhood of \$30 million has been spent by industry and public funds in combating this smog

problem. For instance, the Air Pollution Foundation have spent somewhere in the neighborhood of three-quarters of a million dollars, and the Air Pollution Control District has spent about three-quarters of a million also.

You have made studies, and the State Department of Health has made studies, and as recently as last Thursday or Friday, the smog situation in Los Angeles was bad.

Would you concur in saying if there have been improvements made, and if so, what is the overall picture? Is it about the same as it was, or is it getting worse, or getting better?

MR. LUNDE: The first question is, what good has all the research done? I think perhaps there has been no practical benefit as yet.

THE WITNESS: Yes, I will agree with that.

THE CHAIRMAN: Let us get into some kind of a discussion like that.

MR. LUNDE: The population, the size of industry, and other things are growing by leaps and bounds, and just to keep the thing under reasonable control is a first-class accomplishment. So if you look at it from this standpoint, the Air Pollution Control District has not done too badly.

The second thing you can point out is that industry, at least in the area, has very noticeably reduced the material pouring into the atmosphere. I think the same thing is now true of the hydrocarbons. I do not know the precise figures -- but you may -- but they have spent very large sums on the order of millions of dollars, in treating their plants so there would be lower hydrocarbon losses.

Some attempt has been made to decrease the amount of incineration. I think various people here have pointed that out.

It has been only recently that it was realized what a tremendous contributor the automobiles are to this thing, and I think this is one of the places where the Stanford Research Institute can take considerable credit in that the studies were on the daily tonnage of the hydrocarbon emissions from automobiles, and I think it demonstrated for the first time that automobiles were contributing three-quarters of the hydrocarbons pumped into the atmosphere.

THE CHAIRMAN: 50 percent., they told us.

MR. LUNDE: Whatever it is, it is a tremendously large amount. So our research was aimed to try and clean up this source, so I think the attitude of the Air Pollution District in the last

few years has been definitely a proper one, and we will do everything we can to stop the effluent wherever it is economically sound to do so.

The people who are burning stuff in their backyards say, "Why pick on us? We only contribute 10 percent.", and the motorists say, "Why pick on us? We are only contributing 30 percent.", and some little industry which has nothing to do with petroleum products will say, "Why pick on us? It is a petroleum problem".

So, let us slip in our efforts wherever we can. They may be small, but it is something we can do now, to try and educate the public into the idea that they are really going to have to pay some money to clean this thing up.

THE WITNESS: All the benefits which have been derived, and all the steps taken so far, could have been carried out on the basis of the past experience in England, St. Louis and Pittsburgh, without carrying on any research whatsoever.

It may be that these steps which have been taken have reduced the problem somewhat, but I think it is certainly clear that as enthusiastic as Los Angeles County Air Pollution Control District has been in reducing these obvious sources, by the standards of

well-known procedures, it is not getting at the heart of the problem.

The only way the problem can be eliminated is through probably large expenditures on research which as yet has certainly not borne fruit, but it seems to us that is the only possible way that the problem will ever be licked.

The reason it has not yet borne fruit is that it is a terrific problem, and will take a large amount of money.

THE CHAIRMAN: Your point of view is that all the expenditures and what-not in the last few years you think has not accomplished very much?

MR. LUNDE: I think they have accomplished a "whale of a lot" as far as knowing what should be done is concerned. It has not been one of our problems directly, but in taking measures to counteract smog -- well then, perhaps not too much has been done.

MR. THOMAS (Oshawa): Your enforcement agencies have not lived up to --

MR. LUNDE: I think the enforcement agencies have done everything they could under their powers. At the present time, one of the things they have been advocating for several years is doing away with the backyard incinerators, because they cannot do

away with the backyard incinerators, the people have to agree to have that done to them.

BY THE CHAIRMAN:

Q. Do you feel that state legislation is adequate enough to handle this situation?

A. I really do not know.

Q. Would you care to comment on that, Mr. Hutchison?

A. May I start back a little? I will see if I cannot "duck" that one.

BY MR. ELLIOTT:

Q. We visited several industries, and went through a number of them, and my personal experience is that industry is doing a pretty fair job.

We even went to the General Motors plant, where they were burning their refuse in the plant, where there was no smoke or ash, and yet just around the corner there was black smoke away up in the air.

It seems to me that industry has "gone all out", but the people in the homes on the side streets have not "gone all out", and they have reached the saturation point. They were even getting ready to shut some industries down, just because they felt the area would not stand any more industry.

Would that be possible?

MR. LUNDE: It would be possible, unless the research ultimately does find a way to relieve the condition.

Up until very recently all this money has been spent on finding out what causes smoke. Before you can do anything about it, you have to find out what causes it.

THE WITNESS: Go ahead on my favourite topic, that the cities are obsolete.

BY MR. ELLIOTT:

Q. You think the cities are getting to the saturation point?

BY THE CHAIRMAN:

Q. The country is here to stay, but the cities are obsolete?

A. That is right. Why do we have to pile industries on top of each other? It is mainly because of the communication systems.

You have in Canada, and we have in the United States, a great deal of real estate which could very well be used for industrial sites and for home sites, and I am sure that most every area has a saturation point, or very close to it.

To give you some figures; every year in Los Angeles County increases are being sought for the

city services, to accommodate the constantly increasing population.

Another way of realizing this is that every Monday morning they need one or two additional school houses in Los Angeles to take care of the increased population.

BY MR. ELLIOTT:

Q. Every year there are another 200,000 people going there?

A. That is right.

Q. Personally, I think you "have something there".

A. The oil companies have reduced their emissions of hydrocarbons to less than 20 percent. of what it was before. The automobiles are contributing something on the order of 1,200 tons of hydrocarbons, every day.

Q. At one of our Committee meetings, I asked someone in attendance what he thought should be done in Los Angeles, and to my surprise and amazement, he said "Move the city".

MR. LUNDE: There is a lot of truth in that.

MR. ELLIOTT: I am beginning to think he is right.

BY MR. BRANDON, Q.C.:

Q. It was suggested to us that the removal of

sulphur dioxide was originally made a basic part of the problem, but now the feeling is that it is industry-wise.

A. There have been some suggestions made, and I am sure there is some data to support them.

MR. LUNDE: It is still a highly controversial subject. You will find most of the scientists working on the Los Angeles smog problem, thinking that the SO₂ problem is a medical one, as far as the Los Angeles area is concerned.

There is some possibility of SO₂ in sulphuric acid contributing to the visibility decrease, but most people are all too willing to go beyond this in blaming the SO₂.

MR. LUNDE: There is the other influence which seems to also affect other areas, owing to corrosion. It could be terrific. In England, I am sure the figures are available.

In some areas, much of the smog condition has been blamed on sulphur dioxide, and in the Kenna Distillery, SO₂ has been blamed as having absorbed the carbon particles, and it is believed to have been the cause of the smog in London two or three months ago.

BY MR. ELLIOTT:

Q. We have a terrific problem in the city

from which I come, from our furnaces. We have to the east of us Lake Ontario, and 70 percent. of our prevailing winds are from the west, and 30 percent. are from the east, and we have winds that get up to 25 or 30 miles an hour, so we are in a fairly good position for that reason.

It happens but a very few times we would be in a position where we would get the smoke I have mentioned before.

We have been getting winds even at this time of the year up to 40 or 60 miles an hour, and for quite a little period, and it does not take long to blow the smoke out of the area.

You do not get that here at all?

A. No.

MR. ELLIOTT: I have seen no winds since we have been here -- over a week now -- which were over 5 or 10 miles an hour.

MR. LUNDE: Just "stick around" for awhile.

THE CHAIRMAN: I think we had better recess for five minutes at this time.

---Whereupon a short recess was had.

---Upon resuming.

THE WITNESS: There were 53 Bills introduced into the California State Legislature in 1955, dealing

with air pollution, of one type and another.

MR. LUNDE: In the town I live in, in the upper Peninsula, everybody burns refuse in their backyards, and I doubt if that contributes any particular smog problem, and I do not think there would be any particular hardship on the people as a whole if there was a state law prohibiting the out-door burning in the community.

THE CHAIRMAN: What I had more or less in mind in regard to that part of the legislation, was this; is it broad enough, and does it give the municipalities or local councils sufficient powers? I do not mean for the state to tell the local groups what to do, exactly.

MR. LUNDE: In this particular case of backyard incineration, the local groups have the power to do that. I think the City Council can do this without even referring it to the voters. Of course, they are running the risk of not being elected the next time.

BY MR. THOMAS (Oshawa):

Q. It seems to me there are three phases of this; disposal of garbage by incineration; the industrial emissions from factories, and also the exhaust from automobiles.

During our travels this last week, we find the municipal people are prepared to do something about it, and they are getting some co-operation from the people, and they are getting a degree of co-operation from industry. We found that in the oil refinery and the General Motors, but did you find that here and now nothing has been done about the exhaust from automobiles?

A. Let me answer that by saying this; you are right in saying that nothing has been done, but the reason that nothing was done is they have not a good method of doing it.

It was not until June, of 1954, that there was any active research carried out as to how to eliminate the contribution of the exhausts of automobiles.

Prior to that time, the research we have carried out has always been toward defining the problem; what is causing the trouble? Which is the important thing here? How much of it is there? And so forth.

We have done practically no work in regard to remedial techniques which have been used to remove this.

To get back to the other problem; is the

research worth-while? Has it accomplished anything?

I agree with Doctor Cadle that it has accomplished something, because it is my opinion -- and I think you can find data to support it -- that the smog is no worse in Los Angeles now than it was in 1947 or 1948 -- that is, the number of days of smog.

THE CHAIRMAN: Despite the terrific increase in population and industry?

BY MR. THOMAS (Oshawa):

Q. Further to that question; do you think you are making satisfactory progress in respect to some remedial measures?

A. Certainly. I am sure of it.

BY MR. ELLIOTT:

Q. It might be two or three years away?

A. Yes, or even more than that.

DOCTOR CADLE: The automobile manufacturers themselves are doing work on this. The Los Angeles County Control District has a project on that. The Air Pollution Foundation is sponsoring work at the Southwestern Institute on that type of project.

BY MR. ELLIOTT:

Q. Do the diesels on the railways contribute to this condition?

A. Yes, they do.

DOCTOR CADLE: I think it was thought that they were not, at all.

THE WITNESS: May I disagree with that for a moment? Diesels contribute to the smoke in the Peninsula, yes.

DOCTOR CADLE: Each time we make an answer like that, we have to start qualifying the statements by defining the area about which we are speaking, and about which type of damage you are talking.

BY MR. ELLIOTT:

Q. There is a difference along the coast here?

A. Oh yes, definitely. You have problems right along the coast.

BY DOCTOR EVIS (Secretary):

Q. Before we leave diesels, may I straighten it out? The reason the diesel engines are not a problem is because the amount of diesel fuel burned is insignificant, as compared with gasoline?

A. Yes.

Q. But if you had enough diesel engines, the exhaust would be a problem?

A. Oh, yes, but there are two features of that.

BY DOCTOR CADLE:

Q. If operated properly?

A. Yes, if operated properly. They are more powerful than automobile, and there are devices available now which you can put on diesels to remove a great part of the exhaust.

THE CHAIRMAN: Our big problem is with the old locomotive engines, the coal-burners, emitting the stuff you can see and feel.

I think what Mr. Elliott was getting at was that we are turning over to the diesels; in fact, some of our smaller railways are completely dieselized -- the Ontario government railway is completely dieselized-- and the experts say it will take about twenty years to completely dieselize all the railroads in Canada. A great deal can happen in twenty years.

By replacing the old coal-burning locomotives with diesels,^{it} will greatly improve the situation. Do you not think so?

A. Yes.

Q. And pollution from diesels will be no problem at all?

A. No, I would say the first step would be the switch engines. They should be dieselized before the others.

THE CHAIRMAN: That is a good suggestion.

DOCTOR CADLE: There are some things which

can be done with the coal-burning locomotives.

I know of one situation, in which they took a switch engine, and installed a secondary jet, and when it was set on the tracks it eliminated a great deal of the smoke.

That has been done on several large railways. They cost about \$85.00 each.

THE CHAIRMAN: Thank you very much.

BY THE CHAIRMAN:

Q. You still have the old roundhouses out here?

A. Yes.

BY MR. ELLIOTT:

Q. You still have some coal-burning engines here?

A. No; oil.

Q. We saw some of those engines up here.

A. I think they were all oil. They can "kick out" smoke, just as badly. I suggested that one must have been sent down here from Canada on lend-lease.

DOCTOR SENN: Mr. Hutchison is right; they can pour out smoke.

MR. ELLIOTT: They have converted several of the locomotives over to oil in Canada.

MR. LUNDE: To make sure there is no misunderstanding on the value of research --

THE CHAIRMAN: You have been sitting there giving this quite a bit of thought.

MR. LUNDE: You cannot expect the results of research to be immediately felt. Certainly in the case of Los Angeles, this is the only way it is going to be licked, if it is, but it has not happened as yet. It will take some time.

Virtually any air pollution problem which is not completely settled, this is the only way it can really be solved, that is, by survey and research efforts. But you must not expect them to bear fruit immediately.

DOCTOR CADLE: I worked for Proctor and Gamble before coming here. They have a physics research group, and they estimate it is ten years between the physics research and the time they could actually get something on the market.

THE WITNESS: Here is another example of that. Start with a plant today which is trying to remove some pollutants from the atmosphere; it is usually about three years before they get it operating satisfactorily, even when you have the proper design and devices available, because it has to be adapted to that operation.

BY THE CHAIRMAN:

Q. That is another good reason why this Committee

can do some good at this time?

A. That is right.

MR. MURDOCH: I do not think our Chairman was intending to "put you on a spot". It was only one of his questions, because the best answer to his question is, "Gentlemen, why are you here?". We certainly are here because we have a problem in Ontario. It is not too big at the present time, but we think it will develop along with the development of the province, and we need some legislation to cope with the conditions as they are today.

Politicians cannot bring in legislation, unless they are prepared to answer any questions which may be raised, and you are the gentlemen who are finding the answers to those questions.

I know we have had our eyes opened, and have seen phases of this thing we did not know existed when we started out. There again is where research has helped out.

MR. LUNDE: There is one point on that; we have spoken of the Los Angeles problem as being unique. It is only unique in the sense that there happens to be an unfortunate combination of large population increases going into the area, where the climatic conditions are unfavourable.

There are many places on this continent where equally as severe pollution problems similar in nature to Los Angeles exist, but they do not have the same amount of pollution.

MR. THOMAS (Oshawa): They are disseminated through the area by the wind velocity?

MR. LUNDE: Yes, but there are other places where the conditions are as unfavourable as in Los Angeles, but there is not enough pollution in those areas.

The reason I bring this up is that it is conceivable that in your vicinities, you have a potential pollution problem similar to Los Angeles, but you have not enough pollution to create it.

MR. MURDOCH: In Ontario, we are developing new processes, and new metals, and new alloys, and putting new mechanics into the ores, and I think these new processes in themselves may not be great; they may be acting as catalytic agents, and causing damage out of all proportion to the size of them.

We are finding out the basic elements in ore, and we are in a better position to cope with anything which might come along. I can conceive they will prove to be of great benefit.

For instance, the change in the method of

cracking gasoline, that is, by changing from the thermal method to the catalytic method has had some effect on the exhaust from automobiles, and there may be further developments along that line.

MR. THOMAS (Oshawa): The doctors we met last week said various reports had been presented showing that it has had no effect on the health of the people, but one in particular was a little fearful as to what might happen in the future.

THE WITNESS: It has been suggested this morning -- and I would like to reiterate -- that you do have a maximum amount of pollutants you can dump into any given area. When you start exceeding this amount, then you have smog effects. Now, how much of the smoke effects are you willing to suffer? Are you willing to have this damage for one day a year, are you willing to have the damage for ten days a year, or are you willing to have the damage for one hundred days a year? That is one of the things you will have to answer, and this will require a considerable amount of study to find out what your potential pollution is, and how many days you can expect this, and if you are going to cut it down, it will cost money.

That is one important thing, that

it will cost money, and it will cost both the public and industry as well. When you start putting charges against industry, and requiring them to meet certain limitations, what does it mean? It means usually the price of the product goes up. It means that industry cannot absorb all that. Some remedial expenditures have been in excess of \$20 million. Perhaps some of the larger industries could absorb that. There have been some industries in Los Angeles -- the smaller ones -- where the remedial measures necessary were going to cost between two and five times as much as the capital investment.

BY THE CHAIRMAN:

Q. And they just cannot handle it?

A. No, they cannot handle it. The problem with the big industries -- sure, they can absorb it. But the small ones will have a horrible time.

That is one of the problems down there, because they have so many small industries, and in an area where you have a great number of small industries, without sufficient capital backing, they simply cannot handle the problem with these very heavy remedial costs.

In the United States, there has been a law in effect for the amortization of installations of

this type, usually within three to five years. It is a tax write-off. It is certainly a factor in our national income, and also the state income, by the installation of these processes, but, nevertheless, I still think it is possible and quite necessary, to get industry to co-operate.

Q. You are going to get into the legislative field?

A. In California, as you know, the Legislature set up Air Pollution Control Districts, for instance, in Los Angeles, which is known as the "Los Angeles County Air Pollution Control District".

The Legislature has taken the attitude -- some people have used the term "air sheds", which are comparable to the water sheds -- and this year they set up Air Pollution Control Districts which encompassed seven counties in the Bay area.

This is a District in which each county is represented on the Control Board, so you can cut across county lines. In Los Angeles, the county supervisors are administratively responsible for the Air Pollution Control District. Here they have to be set up, because here there is a different situation, and some of the counties are smaller. The whole area comes under the influence of the same

meteorological conditions. If you are to control the situation, you cannot accuse the deficient counties of not doing anything, and yet, San Mateo will not do anything until San Francisco does something. So they have included all seven of the counties which are in this industrial and meteorological complex, all contributing to this air-pollution problem, as one controlled district.

This seemed~~to~~ be the best approach to the problem, that is, not to give it to counties or towns or anything else, but to make it so the law will have some teeth in it.

On the other hand, there are two philosophies here as to how you should set up your lines. Should you say, for example, that automobiles must not contribute more than 3 percent. of the hydrocarbons going into the atmosphere? You could write a law that way, but it would do you no good, because there are no means of accurately measuring your actual findings, as to whether an industry has committed an infraction of the law or not.

Then, after you pass the law, somebody will have to work out means of checking it. Somebody will have to work out a speedometer check of traffic violators.

The other groups say we should not pass a law until we have the means of actually enforcing it. Then the enforcing part comes in, and I am sure any device you put on an automobile to reduce the contribution of the automobiles of the pollutants in the atmosphere is going to depend very largely on the condition in which you keep the automobiles, and as you know, there are a lot of people in the United States who do not pay too much attention -- and I presume you have them in Canada also -- but they just keep using their automobiles until they quit running, before they do something about it. Even if they are kept in tip-top condition, you will still be contributing a great deal.

This means a tremendous enforcement group, which also means a large expenditure.

DOCTOR CADLE: If we have a copy of the smog movie, it might be a good idea to show it, to give our visitors some idea.

THE WITNESS: We have a smog movie which takes about twenty minutes to run. We worked it out with a group in Los Angeles. It has been shown all over the United States and in many theatres throughout the country.

BY THE CHAIRMAN:

Q. You furnished it?

A. Yes. We have not a new copy.

DOCTOR CADLE: No, but I showed it just the other day, and it is not too bad. I think it will be of interest to you, because it is a scheme which has been quite effective in trying to get some of the ideas of the research people "across" to the public, as to what the problems are, and what can be done about them.

THE CHAIRMAN: We would like to see it then right after luncheon, if possible.

THE WITNESS: "The City which Disappeared" is the name of it.

BY DOCTOR EVIS (Secretary):

Q. Was it "Smog Men at Work"?

A. No, this is a cartoon.

Q. Have you any information about the susceptibility of the various woods, and which gas affects which wood?

A. That would be available.

MR. LUNDE: We could probably get a reprint of that paper. There was one published.

THE WITNESS: There was a paper published, in which all the details were presented to the Third Annual Air Pollution Symposium in Pasadena this spring.

BY THE CHAIRMAN:

Q. We are primarily interested in the State

picture. Do you feel the State is taking the lead, and doing a good job for the local municipalities? Have they set up any code or by-laws, which they could sort of "go along with"?

A. I do not think the State has done that. My personal opinion is they have not taken enough of a lead. I will carry that farther, and say that none of the States have taken enough of a lead.

The State Legislature had a Bill up for consideration, but it was defeated. It was to allocate \$2 million for research in California. This was defeated completely.

Industry-wise, the Federal Government had a Bill up for consideration, providing for \$25 million to be spent over a period of five years, but that was amended and provides for \$15 million to be spent in five years on air pollution, and this was to be administered by the Public Health Service.

This is one of the most important things. If you are going to vote money for research, you want to vote money for long-range research. You do not want to get into a "hassle" every year, for instance, \$600,000 this year, and next year they get tough and they cut it down to \$250,000.

MR. ELLIOTT: Every year we have another group

of inspectors from one Department or another.

BY MR. THOMAS (Oshawa):

Q. You say the Legislature has not given you enough leadership. Do you think it is possible that the reason they have not given enough leadership is because the people have not shown enough interest in it?

A. In California, the most important problem is in Los Angeles, and that is only one County. The rest of the State has perhaps the same problem, but not in the same degree, and they will not worry about it now.

We feel the time to start worrying is before it gets too bad. I maintain that air pollution is like middle-age; you never realize you have it until you have passed it.

BY MR. BRANDON, Q.C.:

Q. Yesterday we heard something about the legislation, and last week we heard about some remedial actions in Los Angeles County. At that time, we were told there never had been a contest with regard to the Los Angeles County legislation, although it was suggested that, with the approval of their attorneys,--- who were fortunately or unfortunately in agreement -- the legislation was simply adopted as such.

The question which occurs to me is this; the mere agreement or disagreement as between counsel does not establish legislation as being 100 percent. perfect, and although you have legislation dealing with a particular county, which is, for practical purposes, adopted, would it not be not only necessary but advisable to the 'nth degree to have legislation not only to operate in Los Angeles County, but to apply generally in all communities, wherever the State might have jurisdiction, so you would have uniformity, because, as I see it now, the potential in California is that you now have legislation in existence for Los Angeles County, which may or may not be the same legislation as for the Bay area here, or in San Diego, if legislation should be enacted there.

And as between various industrial plants, the same type of industrial endeavour, would have the potential of three standards of legislation to live up to, whereas if you had only one State legislation, that would seem to be more preferable.

Would you comment on that?

A. That is definitely true, and that is, as I understand it, one of the reasons why industry will not locate in Los Angeles County, because of the costs which would be imposed upon them due to the regulations

imposed by the Air Pollution Control District, whereas they could locate in San Diego, and would not have these costs.

It is unfair when you have rules set up in one area, which are not applicable in other areas.

Q. Especially when it is all in the same State?

A. Yes, especially when it is all in the same State. So, as you point out, these rules are set up by the Control District and when the Bay Counties Control District is set up, -- which will be on the 2nd -- they may establish different rules than those established in Los Angeles. They may be more stringent, or they may be less.

BY DOCTOR EVIS (Secretary):

Q. It is permissive legislation theoretically, allowing every county in the State to set up its own Air Pollution Control Districts?

A. Yes.

BY THE CHAIRMAN:

Q. It is mandatory. It is not permissive?

A. It is mandatory, but it is permissible to have them set up the Control Districts, which permits them to set up the regulations in that District.

But it is mandatory to set them up.

DOCTOR EVIS (Secretary): Yes, but after it

is set up, if one District does not wish to become active, it does not have to, so it is really permissive, as far as the results are concerned.

MR. BRANDON, Q.C.: But the way it is now, there are three differentials in regard to the legislation.

MR. LUNDE: It perhaps has to be, in one sense. The problems are different in different localities. For instance, an industry can emit much more in a thinly populated area than in a thickly populated area. The same standards cannot apply to all areas.

THE WITNESS: For example, in the northern California area, we have a great deal of lumbering industry, and their waste woods are burned in these cyclone incinerators.

THE CHAIRMAN: In Canada -- and I believe in the States -- there are certain things over which the Federal Government has full control, and other matters over which the Provincial Government exercises control.

At the present time at home, the Federal Government controls the railroads, collects most of the taxes and things of that kind. The province has the health services, education and so on.

What I was getting at is this; supposing

Ontario takes a lead in this matter of air pollution and sets up new legislation, and so on; could the Federal Government come into the picture in some way? I was thinking of getting something from them to assist in the programme. Do you get money from your Federal Government for your Air Pollution schemes, State-wise?

A. No, not as such. But our Federal Government is contributing manpower to study the problem in the specific state.

Q. If the state asks them for help?

A. That is right. The Federal Public Service will contribute two or perhaps three people, for working in the State of California, on air pollution studies.

In addition to that, the U.S. Public Health Service will no doubt allow grants to study problems which are specifically problems of California, but are not problems in other states at the moment. That is the way they will help.

They will not, as I understand it, turn over any funds to a State Department of Public Health, but they are going to lend men to the State Department of Health. They did that last year.

And they will support research on particular

problems, which are problems of the State of California.

BY MR. BRANDON, Q.C.:

Q. Is the investigation restricted entirely to the heavily concentrated states?

A. Yes, to the states which have a large industrial problem, but they are cutting it down within the state, and to the best of my knowledge -- yes, I would say that every state in the Union has some area which has an air pollution problem.

MR. LUNDE: It might be a single industry.

THE WITNESS: Yes.

BY THE CHAIRMAN:

Q. Just to consider a state like Wyoming.

A. Oh yes, and consider Nevada. I understand that Reno has set up air pollution machinery, and I heard the same thing about Los Vegas.

Q. Would you say that in each of the forty-eight states, each state has some state legislation?

A. No.

Q. But they have a problem?

A. Yes.

BY MR. BRANDON, Q.C.:

Q. That is the basis for this \$15 million grant; it is provided for the benefit of the country at large?

A. That is right. There also is another interesting thing. They have appreciated the fact that this problem cannot be solved without research, and they have also appreciated the fact that a large research problem, such as this, needs certain direction from a certain area, and the only way the Federal Government could do that, was by assigning it to the Department of Health, which will give them a centralized direction over this whole research into air pollution.

Q. I suppose the basic problem is in getting rid of it in a given area, even though you may have, as Mr. Lunde has mentioned, air pollution in the country, but in the populace areas, it is concerned with the concentration of effort?

MR. LUNDE: A single source air pollution problem is something about which we know what to do. The general air pollution problems we find in the cities require technical studies, and research, if we are going to find out what to do about them.

Take the two samples again; that of a smelter putting out tremendous quantities of SO_2 , which might be injurious to farm crops. There are different standards and well-known procedures for removing the SO_2 , although it does not remove their

pollution problems.

But in the case of Los Angeles, we know there is pollution, but until recently they have not known what caused it, much less as to what to do about it.

Therefore, the research funds which have been appropriated by the Federal Government, and may be appropriated by the state, are largely devoted to the problem in the concentrated areas.

BY THE CHAIRMAN:

Q. There are ways and means of doing something about it?

A. That is right.

BY MR. BRANDON, Q.C.:

Q. There seems to be something peculiar about dealing with the Los Angeles situation, with their backyard incinerators, where they have legislation to correct that situation, but they have granted an extension, and say they can carry on for another two years.

A. That is a matter of convenience in not getting the municipal incinerators.

Q. I am coming back to that. We did not see the two incinerators, but we were told about them, and judging from what we were told, I do not think it

would take two years -- I may be wrong -- but I think that with the expenditure of a little energy, they could be completed in the course of a year.

The only place they have fallen down, as Mr. Murdoch has said, is that they do not have a proper collection service for the disposal of refuse, and if they had built a good incinerating unit, a large part of that problem very likely would disappear.

A. As regards the collection problem, a great many people have really raised the devil.

THE CHAIRMAN: They do not want to offend the public. They are thinking more of the votes, than of the public.

BY MR. BRANDON, Q.C.:

Q. It is a case of the public being catered to now. They say, "What is the Board doing about this situation?".

A. There are many people in Los Angeles, and there are as many opinions as there are individuals. The public is clamouring for some results to be achieved, and yet you have this hesitancy on the part of the Authority.

It just does not seem to add up.

DOCTOR CADLE: At least three or four times I have talked to people, and have been asked, "What can

be done about the Los Angeles smog; do not suggest to me that it is the backyard incinerators".

THE WITNESS: That is right. They say it is the oil companies.

DOCTOR CADLE: They will believe only what they want to believe, and when you say that something is contributing 15 percent., and industry in general is contributing 40 percent., they say, "Figures do not lie; let us get after the 40 percent.".

THE CHAIRMAN: We have that at home, and it is not unique.

BY MR. THOMAS (Oshawa):

Q. We hear so much about "automobile smoke" and "diesel smoke", and "pipe smoke"; where does the tobacco situation fit into this?

A. The lung-cancer problem is being given some consideration at the present time. They have also set up a Tobacco Research Foundation. That goes to the medical schools. We have had several write in, in connection with possible lung cancer, and one man said "If I were a mouse, I would not smoke".

MR. MURDOCH: In the town of Harrow, which is my town, until this summer, when I moved to a neighbouring town -- we had good-will and we had

good newspapers, and one of them started to blast the people of Harrow, saying they did not have water, and did not have garbage collection, and things of that sort. It was just like somebody coming over from England and telling us what we should do, but through certain efforts, it changed, and now it is a town of about 2,000 people, which has taken adequate steps to burn the garbage, and they put in a garbage incinerator this year, and it cost \$14.00 per household per year.

Everybody is very happy about it.

THE CHAIRMAN: Was that why you got out of town?

MR. MURDOCH: It was already in the other town.

MR. THOMAS (Oshawa): Was your removal voluntary?

MR. MURDOCH: There was no significance about my moving at all.

DOCTOR EVIS (Secretary): Doctor Cadle said that in his vicinity it would be alright to have a backyard incinerator, but if the community grows to any extent in the next ten years, it might be a real problem. Therefore, I think in a small community, it is better to start with the garbage pick-up.

THE WITNESS: They have a garbage pick-up, but it is composed of combustible material, such as paper and rubbish from the gardens.

DOCTOR CADLE: Our garbage pick-up is this afternoon.

THE CHAIRMAN: It is today?

DOCTOR CADLE: Yes.

BY THE CHAIRMAN:

Q. You will have the rubbish situation here as they have in Los Angeles?

A. Yes, but it is almost all used for fill.

MR. BRANDON, Q.C.: I suppose some people put it in the incinerators, and others put it out for pick-up?

DOCTOR CADLE: From San Francisco to about forty miles out, to San Jose, -- it will all be one big city in time.

THE WITNESS: As a matter of fact, I do not use the incinerator. I just pile the brush up and burn it.

MR. THOMAS (Oshawa): Many people think it should go back into the ground as fertilizer. I think that is a good way of looking at it.

MR. BRANDON, Q.C.: Are there any other general types of industry which, in your opinion, did

make the same contribution to air pollution, other than those we have discussed? That is to say, types of smelter or automobile exhausts, or incineration in general?

MR. LUNDE: It might be easier to put it the other way.

THE WITNESS: Here is an example, in the coffee-roasting plant in San Francisco.

Personally, the odour of roasting coffee is pleasant to me, but many people living down near the plant find it most unpleasant, and they have had to put in remedial equipment.

BY MR. BRANDON, Q.C.:

Q. From an odour standpoint?

A. Yes, and from burning the oils and by-products distilled off in the roasting process. Apparently these are objectionable to quite a number of people.

Another example is the plant where they make ketchup. There were complaints coming in and they had to do something about them.

BY MR. THOMAS (Oshawa):

Q. Are you giving much consideration to the opinions that we frequently hear with respect to air pollution?

A. We have been in contact with a number of opinions which we heard at Doctor Leslie Lawlor's Third Air Pollution Symposium, at which were given a number of medical and chemical papers. They have visited us, and we have had people visit them periodically.

The big problem there is SO_2 , and we have become quite familiar with the work they have done, particularly at the power station, where they are scrubbing the SO_2 out.

If you want to break off, we have made reservations for luncheon.

THE CHAIRMAN: That is fine. Let us go.

BY DOCTOR EVIS (Secretary):

Q. Is there anything in your research equipment which you think would be of advantage for us to see before we leave?

A. We would be happy to show you what we have.

DOCTOR CADLE: We can give you a tour of our facilities, and give you some idea of the equipment we are using.

Actually, most of our smoke monitoring equipment is currently in the field. That is, most of the equipment we have for generating artificial smokes, and determining the concentration in artificial

smoke, and endeavours of that sort.

THE CHAIRMAN: I think by the time we have luncheon and see the picture, it will be time for us to "shove off".

DOCTOR CADLE: One laboratory is very much like the others, and while we would be happy to show it to you, I do not think you would get too much out of it.

---Whereupon at 12:25 o'clock p.m., the Committee adjourned for luncheon.

---Following the luncheon, a motion picture was shown to the Committee, entitled "The City which Disappeared".

MR. BRANDON, Q.C.: That is a very practical film.

MR. THOMAS (Oshawa): Mr. Hutchison and gentlemen, it is my pleasure at this time to extend to you and your colleagues our sincere thanks for affording us this meeting today. Our discussions this morning were very, very interesting, instructive and informative, and I am sure when we go back to Ontario, we can make some recommendations to our Legislature.

We are very pleased at the reception we have received in San Francisco, and here today, and we want to thank you again for the very helpful

suggestions you have given us today.

MR. HUTCHISON: Thank you. Anything we can do, or any information we can give you, please let us have the opportunity to do so. These movies are available if you want to use them at some time.

THE CHAIRMAN: I think it was better than an "emergency effort". I could not see anything wrong with them.

DOCTOR CADLE: I was a little surprised myself. I think the operator may be a perfectionist. It has received very good reception, wherever we have shown it.

MR. HUTCHISON: These are not for sale. They are for loaning purposes.

MR. BELYEA: There may be some difficulty in getting them across the Border.

MR. HUTCHISON: We have one on the way to South America now. You invite us up to Canada and we will bring it with us.

THE CHAIRMAN: I know Mr. Thomas has expressed our feelings. Let us hope we meet again.

MR. MURDOCH: And we wish you every success in your research work.

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--Whereupon at 3:00 o'clock p.m., the further proceedings of this Committee adjourned until Wednesday, October 12th, 1955, at 10:00 o'clock in the forenoon.



P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

Dr. Frederick Evis, Secretary.

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VOLUME X

Wednesday, October 12th, 1955.

San Francisco, California.

—0—

R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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T E N T H D A Y

San Francisco, California,
Wednesday, October 12th, 1955,
10:00 o'clock, a.m.

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The further proceedings of this Committee reconvened pursuant to adjournment.

The following proceedings were held in Room 1019 in the Clift Hotel, San Francisco, California.

Mr. A. H. Cowling, Chairman,
 Presiding.

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PRESENT:

Messrs. Brandon, Q.C.,
 Murdoch,
 Elliott,
 Thomas (Oshawa),
 Gordon,
Dr. Frederick Evis, Secretary.

APPEARANCES:

Mr. H. Belyea,	Ontario Department of Health.
Mr. W. Byron Rumford,	Member of the State Assembly; Chairman Public Hygiene Interim Committee of the State Legislature.

Dr. Malcolm H. Merrill, Director of Public
Health, State of
California.

Dr. Christopher Leggo, Consultant in
Industrial Medicine,
In-Plant Medical
Service; Director,
Eastman Kodak Processing
Laboratory, Palo Alto

Mr. Norval Ayers, Public Information
Officer.

Mr. C. Eberts, Canadian Consul General

Mr. George H. Blouin Consul of Canada.

- - - -

MR. W. BYRON RUMFORD,

Member of the State Assembly; Chairman, Public Hygiene
Interim Committee of the State Legislature, appearing
before the Committee, but not being sworn, deposes
and says:

BY THE CHAIRMAN:

Q. Mr. Rumford, I will tell you what we are
doing. We are a Select Committee -- I think that
compares perhaps with your Interim Committee --
appointed by the Ontario Legislature to sit between
Sessions, and to study and report upon all matters
of air pollution and smoke control.

Ours is an all-Party Committee. We have
three Parties in our House and we are all represented
on this Committee, so it is not --

A. A political issue?

Q. No, not a political issue. Everybody has agreed that something must be done.

A. What is your problem?

Q. Smoke, chiefly. We are not faced with a situation such as they have in Los Angeles as yet.

A. Then yours might be much easier to solve than our problem here.

Q. Will you tell us about yourself and your Committee, and what it does?

A. To give you a little background; I have been a member of the Legislature of California for seven years, four terms, and we have only one more year to go, as an election comes up next year.

BY MR. ELLIOTT:

Q. Do you have an election each year?

A. Every two years.

Q. This is a Legislature sitting for two terms?

A. That is right. In the Senate, of course, it is four years. We are elected for two years.

BY MR. THOMAS (Oshawa):

Q. I think it would be interesting to all of us present, if you would tell us what your Interim Committee is. First, you are an Assemblyman of the State of California?

A. Yes.

Q. What is the salary of the Assemblymen?

A. We get \$500. a month.

Q. That is complete?

A. It is not complete, as far as our expenses are concerned. While we are in Session, we get \$12.00 a day.

BY THE CHAIRMAN:

Q. Plus the \$500.00 a month?

A. Yes.

BY MR. MURDOCH:

Q. How many days do you attend a Session?

A. This is a regular-Session year. It starts the first Monday in January, and we serve 120 days.

BY THE CHAIRMAN:

Q. That is about four months?

A. Yes. This year, we adjourned in the month of February. The month of January is dedicated to the introduction of Bills, and that gives us a little time to assemble the Bills, and get them in order. Then we return in March, and we serve until possibly sometime in June. Generally our 120 calendar days are completed in June.

BY MR. THOMAS (Oshawa):

Q. How many people would you represent?

A. About 162,000. This is locally. I represent one-eightieth of the population of the State.

BY MR. MURDOCH:

Q. You have 80 members?

A. Yes, and there is a population of approximately 13 million, so figure one-eightieth of 13 million. That is theoretical. However, every district is really not in itself cut out, and made into a perfect area.

Q. You do not have a regular Session the second year?

A. We adjourn around June, and we go back in March, and serve one month. That is our budget session, and that is the year in which we campaign also.

We are serving on Interim Committees now, mostly.

BY MR. BRANDON, Q.C.:

Q. When does your election come up?

A. Next June.

BY THE CHAIRMAN:

Q. How do you know that? Is there an announcement?

A. Yes; that is fixed by law.

BY MR. BRANDON, Q.C.:

Q. How long a campaign do you have previous to the election?

A. We will get out of Session the first part of April. Before April, of course, we will have our Committees set up, and we have about five or six weeks' campaign.

BY THE CHAIRMAN:

Q. And you are a Republican?

A. I am a Democrat.

BY MR. ELLIOTT:

Q. Are you not campaigning all the time?

A. Well, not actively. Of course, we are always campaigning.

BY MR. THOMAS (Oshawa):

Q. You have been elected four times?

A. Yes.

Q. Perhaps you could give us some pointers on how you do it.

A. The first time I had a very difficult time getting elected. We had two Democrats. We have in California the cross-file system.

Q. We do not know about that.

A. You gentlemen should have it. A Republican is not a Republican; he is a Democrat.

BY THE CHAIRMAN:

Q. That makes it just dandy. Do not say any more.

A. Here is the picture. In the State of California, theoretically, from 1912 we have allowed persons who are able to secure enough signatures, to get on another Party's ballot. One Democrat can go out and get twenty-five signatures of Republicans, and if I do that, my name will appear on their ballot.

I also get twenty-five Democratic signatures for my name to appear on my own ballot, and if I am able to beat the Republican candidate in his own Party, and at the same time take my own, I will be elected in the Primaries.

BY MR. ELLIOTT:

Q. The Primary elects you, then?

A. Yes. This last election I beat the Republican on his own ticket by 1,120 votes, and I then swung my own by 20,000.

The time before that, I had no opposition from either Party, but the time before that I did have opposition, and I beat the Republican again on his own ticket.

BY THE CHAIRMAN:

Q. You get \$500.00 a month?

A. Yes.

Q. About \$6,000. a year?

A. Yes.

Q. Plus the \$12.00 a day during the Session?

A. We get \$15.00 while actively engaged in Committee work. It is really only expenses. You can judge that by your own travelling. If you eat, and pay your hotel bill, you are practically poor.

Q. How many on the Committee?

A. On my Committee, there are eleven members.

Q. Are all Parties represented?

A. Both Parties are represented, yes. I think there are five Democrats and about six Republicans.

MR. MURDOCH: Mr. Chairman, at this point we have discussed things we are very interested in because we have had a lot of technical advice and so forth, up to this point on smoke control and air pollution.

I wonder if it might not be a good suggestion at this time, when everything is being reported, 'if we could continue our talks about smog, and what Mr. Rumford's Committee is doing, and then call it off officially, and have sort of an informal discussion on things we have in our minds.

THE CHAIRMAN: That is fine; let us proceed on that basis.

BY MR. ELLIOTT:

Q. Is the smoke control a political issue?

A. It has not become a political issue, other than a person running for election might say, "I think we should do something about smog".

Q. It is not as bad as Los Angeles?

A. No. We had a tendency to have smog this morning.

BY MR. MURDOCH:

Q. What kind of a political campaign do you have? If somebody in Los Angeles said, "We do not think this Smog Committee is doing anything at all but spending a lot of our money for nothing", what kind of a feeling would that raise?

A. You probably have the history in California, and the political implications are simply these:

The smog creeps up on people, and rather than, as a doctor would do, see the patient and make a diagnosis and then prescribe treatment, we first began to try and treat the situation in Los Angeles without having any diagnosis and it led us into a lot of difficulties and political ramifications, particularly, because we established a governmental

unit, and have to establish it as a scientific body, but up to now, we have got no results.

The District was established in Los Angeles, but the Air Pollution District, in the first place, was not scientifically drawn up, because it did not cover the entire Los Angeles Basin. It did not know where to start. It had no concrete scientific knowledge as to the source of smog; they could not say that 10 percent. was coming from the automobile industry or 20 percent. from industry or vice versa and 15 percent. from incinerator burning.

They could only say that where they could visualize and see smog, they could then use a Ringelmann chart, which is an indicator to show whether the density of smoke was causing the nuisance.

So they were in a turmoil; every one of us on this political Committee.

Then the political ramifications crept in, "Do not blame it on us; we are the refineries; just leave us out of the picture". You will have to remember that the refineries are a contributing factor to pollution, but they said, "Let us not say anything about it".

After all, the refineries have been very kind to some legislators in their campaigns, I judge,

and so there was a reluctance to attack the refineries, but to lay the whole blame of the smoke on burning of some kind. That was the first attack on smog in Los Angeles -- the burning. And, of course, the most smoke was where they could see it coming out of the smoke stacks.

The people of Los Angeles were incensed because nothing had been accomplished for a year or two after the organization was formulated, and they began to demand -- particularly in the Pasadena area -- that something be done, and they said it was run by politicians, who were not doing anything at all.

Actually, there was not much they could do until they had the scientific information to enable them to say, "You are contributing hydrocarbons into the air, which, of course, is detrimental to health and well-being".

I think the people in Los Angeles have finally come to the conclusion that they have a real, scientific problem before them, and not a political problem.

We had a number of Pasadena women's committee before our Committee, and their testimony, as it referred to scientific analyses, I think was just as mixed up and confused as some of the scientific information we were getting. The scientists

themselves have not agreed, but we have all types of theories.

BY MR. BRANDON, Q.C.:

Q. If I may interrupt at this point --

A. At any time, of course.

Q. You mentioned the Pasadena Committee appearing before your Committee?

A. That is right.

Q. Did all of these suburban municipalities of Los Angeles have committees of their own?

A. A citizens' committee?

Q. Yes.

A. I do not think so.

Q. Pasadena is unique?

A. There might be other areas, but I do not think it is a general pattern.

BY MR. THOMAS (Oshawa):

Q. Would there be a group of ratepayers band together to bring the matter to your attention?

A. Only to say that something should be done and that there might at any time be a catastrophe in the area. That well might be.

Q. We are aware of the fact that yours is a definite group set up, and also there is a group headed by Dr. Hitchcock of the Foundation.

But was it a case of the Pasadena Committee being dissatisfied with these two organizations, and appearing before your Committee with a complaint?

A. That is exactly right.

For instance, the first executive officer of the Air Pollution District in Los Angeles, Mr. Larson, had this tremendous responsibility to do something, and he had no information with which to do it, and of course they took out after Larson, and said, "Look; we have established here this political unit; why are you not doing something?".

Q. Larson was the head of the District?

A. Yes.

BY THE CHAIRMAN:

Q. The head now is Mr. Griswold?

A. That is right. Naturally, he accepted the job. I do not know what he gets; \$25,000 or \$20,000 a year, but he also has to wait until he gets scientific facts, with which to do the job.

At this point, we still do not have the real facts as to what really causes the smarting of the eyes. We are seeking for information now.

BY MR. BRANDON, Q.C.:

Q. Did Mr. Larson have any particular qualifications for the job to which he was assigned?

A. He was a Colonel in the Army, and had experience in chemical warfare. Something of that nature.

In regard to the technical men in the field; you just do not find them every day. Even Hitchcock himself has not had any particular experience in this particular problem.

Q. This Citizens' Committee; did they feel that your Committee should assume the responsibility to do something, rather than the other two groups?

A. I will put it this way. The Public Health Committee, in order to let the citizens of the States know that we are aware of the programme, and are keeping our eyes on the progress being made, scientifically and otherwise, in an attempt to remedy the situation, had its meeting in Los Angeles for the purpose of acting as a sounding board, and letting these people come in and letting them hear the scientific testimony which was being presented, and at the same time that we might also hear their views, and see if they had any solution, and to see if they could come up with any answer, inasmuch as it was an organization with several thousand people, and with a letterhead which had many names on it.

Q. You asked various groups to appear and make

representations at your sessions?

A. That is exactly right. We sent a notice to Mr. Maga, the new Director of the State Department of Public Health, to Mr. Griswold, to Doctor Paulter of the U.C.L.A., and citizens' groups, and to any citizens who wanted to appear.

Q. Did you have any group appear before the Committee, except that of Pasadena?

A. No. We had individuals, but they were not organized. Their testimony was to the effect that something should be done, that pressure should be put on the petroleum industry.

BY MR. MURDOCH:

Q. It was mentioned to us that possibly 30 or 40 Bills -- I forget the exact figure -- were presented at your last Session?

A. That is right.

Q. On smog?

A. Yes.

Q. Why would there be so many?

A. The reason is that most of these Bills came out of the Los Angeles area. Many of them were what we call "spot Bills"; that is, they had no substance in the body; it was merely a title, so we could fill in at the proper time what we might work out, between

the time the Bills were introduced, and the time they were considered in the Legislature.

BY THE CHAIRMAN:

Q. The people wanted to indicate to the public they were "on the job"?

A. That is right. I do not think there was one Legislator who did not introduce a "spot Bill".

BY MR. MURDOCH:

Q. Some of these "spot Bills" are combined into one Bill, that is, one Bill came out of them?

A. We did not get one out of the 40. We extended the privilege of organizations to include areas, instead of county units. We allowed a District to expand.

Then there was a Bill by Senator Breed, which gave to the University of California, \$240,000 for research.

The Bills on that which had emerged in the Legislature, were the ones which dealt with research, because, if we are to solve the problem at all, there is a feeling -- and I feel -- that there should be some unanimity in the direction of research.

BY THE CHAIRMAN:

Q. What did you do?

A. I am a perfectionist, and I have drawn in

the public administrator.

Q. We asked the question, and it would be interesting to get your idea. There has been some suggestion that there were \$30 million or \$40 million spent by industry, and in a public way the Air Pollution Foundation has a budget of about three-quarters of a million dollars, and the District has about three-quarters of a million dollars, and they have a big staff, and everybody is really "going to town", and yet nobody can say, "We have made a lot of progress, and are getting to the point where we are attacking the smog".

We were there a week, and on several occasions we experienced much first-hand smarting of the eyes, and sore throats, and just a general miserable feeling.

What do the Legislators think about that?

A. We had a report in 1947, our first report to the Legislature from an Interim Committee which had to do with air pollution and water pollution, in which they made specific recommendations at that time for intensive research.

Of course, the problem certainly was not an emergency, so the Legislature felt at that time they should take the position that two or three million dollars should not be spent for research.

However, San Francisco was not affected, and they felt it was strictly a local problem, and many other areas had said, "What is this thing? We do not know about it".

So they did not get the appropriation.

However, since we continued with the activities of the Los Angeles Committee and those of the Citizens' Committee in the area, and constant agitation in the press, there was then presented what they tried to promote as a solution to the problem.

So we had all kinds of Bills, but actually they did not have anything to offer.

Our big problem, as it relates to the matter which you have discussed here, that is, the money which is being spent; there was no co-ordination in the direction of research.

The automobile industry did not want to admit they were a source of smog; the refineries and the oil industry did not want to admit it, or if they did, they did it very quietly. The Foundation had an experiment upon a then unknown matter, and the Air Pollution District was purely an enforcement agency, having little, if anything, to do with experimentation.

The University of California was doing some

experimentation, particularly in the Riverside district with an agricultural situation, and I think they were making some headway.

We had the "Cal. Tech." doing some research, and somebody has the theory -- I think Haagen-Smit and others, have made quite a bit of scientific contribution to the knowledge on the meteorological situation and the related products. However, I do not want to get into that technical aspect.

BY THE CHAIRMAN:

Q. We have had that.

A. They could give it to you better than I. But there was no co-ordination.

I understand, as you have mentioned, that the oil industry has spent \$25 million trying to curb the outlet of hydrocarbon and saturated hydrocarbon into the air.

What we were trying to do was to get an agency which would co-ordinate all these things. Perhaps we are a little late. Perhaps our money has "gone down the drain" and valuable time has been lost.

We have a Bill to set up a Commission to co-ordinate all the activities of research, and providing for \$2 million to this particular agency undertaking this specific work.

MR. MURDOCH: How apprehensive are the farmers about the damage to their crops? From a political standpoint, I imagine they would be genuinely alarmed, and possibly clamouring for something to be done.

BY THE CHAIRMAN:

Q. And just following that statement; do you have any farmers in your constituency?

A. Who are affected?

Q. Yes.

A. No. Personally, I have not. However, there is a smog condition affecting vegetation.

In answer to your question, Mr. Murdoch, the farmers in the Los Angeles area are concerned. The agricultural development in that area is gradually being lost. People are moving into what was then known as one of the finest agricultural areas in the world, orange groves, and so forth, which made Los Angeles a foremost area years ago.

These are now being developed for residential areas, and not too much intensive and extensive agricultural work is being done in that area.

But the little which is being conducted, has been affected by the gases on some leafy vegetables, particularly spinach.

BY MR. MURDOCH:

Q. We did not hear too much about agriculture. Possibly because we did not go to the right places, because we went in by plane, but over the miles we did travel, it was nothing but built-up areas, and your point is that formerly was very rich agricultural land?

A. That was the chief agricultural area.

Q. It is practically all gone now?

A. Yes, it is being eliminated.

Q. We understand that California is one of the very few states where this air-pollution legislation is mandatory in the three Districts concerned. You have already set up the Los Angeles District, and this year you are setting up a District in the Bay area of San Francisco, and then it is planned to set up a District in San Diego at a later date?

A. Yes.

Q. Will you tell us about your mandatory legislation, breaking it down from the state level to the districts and municipalities?

A. In the first place, the state has taken the position of "hands off".

Q. That it is a local situation?

A. Yes, purely local. The Los Angeles situation

is local, and they wanted to keep it that way.

So they enacted the legislation to establish a County District in Los Angeles, allowing it at the time to establish a unit, supervised by the Board of Supervisors, as the governing unit of a legislative body, with an executive officer -- at that time, Mr. Larson -- with enforcement powers to condemn a nuisance, and to prescribe certain regulations, and issue licenses.

At that time, the Los Angeles District only got into it in a small way. They were feeling their way about, and I think they ran into quite a number of difficulties, even to the degree they had to go to the courts on some of their enforcement orders.

BY THE CHAIRMAN:

Q. Hundreds of times, we have been told.

A. I was speaking about the big, major cases.

Since then, they have been actually penalizing motorists, and so forth. I was speaking about where they were attacking industry, and they said that this concentration of smoke is becoming a nuisance.

At the University of California Law School, they have a review of the many legal implications involved in the Los Angeles area, in the courts.

There was one unit which the Legislature

established, that at least did give some impetus to this organization.

We had an opinion from the Legislative Counsel's office -- which is the legal reference office in Sacramento for the Legislature, and we often get opinions from them -- that the state had a responsibility to abate a nuisance wherever it might exist, so the state is not without obligation, even though they may still think it is a local situation. But they have the legal responsibility of caring for the health of the people of this state, wherever a condition has been proven to be deleterious to health and welfare.

So we have that entity. The state does have the responsibility, irrespective of whether the Governor wants to get into it or not.

The San Diego organization is one specifically set up by the Legislature to act in the capacity of a local health unit, which is responsible to the Health Officer, and is functioning in that manner.

They may ask for additional legislation; I am not too sure, but up to this point, they have had no legislation.

In regard to the Santa Clara situation; they established that on their own volition as a

County District, but the District was not complete, because it did not include the Basin. The same thing applies to the Los Angeles situation.

Others are run by the County Health Officer with powers granted by the Board of Supervisors.

And the San Francisco District is a nine-county District which was set up on the basis of six or possibly seven in the Air Pollution Basin agreeing, and the machinery provided so that additional counties may come in on their own volition, later on.

If this District solution is to be meaningful, it will be necessary eventually to have the two counties come into the District, because some of these Counties are contributing to pollution in this area.

Those have been some of the official acts which the Legislature has taken upon itself.

BY THE CHAIRMAN:

Q. Do you think that in regard to handling all these Districts, that the actual passing of Bills and specifying a certain District, is probably a better way of handling it than to put it on a municipal basis?

For instance, Santa Barbara can set up a situation, and San Jose can have another.

A. Definitely. The smoke goes beyond county units.

For instance, here in San Francisco, you have a number of large industries. They may say the same thing in Alameda County, that most of their material settles over in Alameda County, where we have a large range of mountains to the east, and that is why the smoke settles in that little valley.

We feel if there is to be a solution, it must necessarily be on a District basis, rather than on a municipal or county basis.

Q. Has your legislative Committee made studies in other states?

A. Have we gone outside the state?

Q. Yes.

A. No. There is a reluctance on the part of the legislators themselves to send men outside the state, for fear of there being criticism of a "junket".

This is an unusual problem, peculiar to the state of California, because of the number of basins we have on the Pacific Coast.

In fact, one writer has said this phenomena has developed on the Pacific, and is peculiar to the Pacific Coast, and is not a problem which has arisen as a result of industry.

Q. You spoke about a "junket"; is it not a

habit of these committees to go around?

A. Yes, and we have had criticism in spite of the fact --

Q. Who has criticized you?

A. The press.

Q. Both Democratic and Republican?

A. We do not have a Democratic press.

Q. Is it serious enough for the Legislature to stop a Committee from going to some place to get good public relations?

A. If we could justify going to Pittsburgh, for instance -- and that is one of the few places where they had air pollution -- then we would take a second look at it, and think very seriously as to whether we could get something out of it.

But I believe that going to Pittsburgh will not solve anything. It will not give us any more information than we already have.

Pittsburgh had a problem; it was smoke, soot and dust, and they had one Bill, I think, in the State of Pennsylvania which solved their problem.

We followed their whole Act or procedure, which would not help us entirely, but gave us some idea as to the structure, that is, about the administrative structure.

BY MR. MURDOCH:

Q. How many Interim Committees would you have acting at the present time, as a result of your last Session?

A. You are speaking in general?

Q. Yes.

A. Committees of the Legislature? Twenty-one. All the Interim Committees are by legislative act, and a majority of those committees function because of the nature of their work.

If I went into it, I could tell you the legislative process and how difficult it is for us to hear and give ample time for finalizing the necessary legislation, which may take a day or two, of a year.

We can only think that during the interim, we can devote the whole day to^a hearing on the question of smog, whereas in Session we do not have the time to devote more than perhaps a half an hour.

There are a number of Bills coming up, and there may be an interim piece of legislation which calls for differences of opinion and involves large sums of money, and we will say we will pass it on to an Interim Committee for further study. Generally, new ideas or important problems are heard by these

Committees. I think they serve a good purpose, and I think we are fortunate in being able to get men to go out on these things.

Speaking of "junkets"; we have a project, and one of the problems is the treatment of mental diseases. Much work has been done -- I will give you this in passing -- in the East, in some of the major institutions.

We are also allowed that privilege, but the newspapers are such that we cannot tell our story. We cannot tell how we might save the people \$20 million a year.

BY THE CHAIRMAN:

Q. Why can you not?

A. How can we? They would not credit it. They will attack the idea of going to New Jersey, for instance.

Q. Do they not get behind you fellows?

A. No. I think the basis for it is that the Interim Committees have been abused prior to the present regime.

BY MR. BRANDON, Q.C.:

Q. They will not give you the opportunity of expressing yourselves, and giving the reasons for studying these various matters?

A. No.

BY MR. THOMAS (Oshawa):

Q. Supposing you had a public meeting; would they publish it?

A. It would still be in the newspapers.

BY THE CHAIRMAN:

Q. They have taken a "go" at you, and that is it?

A. Yes. You may write to the Chronicle, and say that is unjustified, and they will print your letter in the letters to the editor.

BY MR. BRANDON, Q.C.:

Q. They would not give you the front page?

A. May I point out in justification, that there have been abuses of Interim Committees in the past.

Q. Is that throughout California, or just in this area?

A. No, the whole state. I think the boys are a little skeptical. The press we have here do not react. I say that frankly.

BY THE CHAIRMAN:

Q. Certain of our newspapers favour the government, and certain favour the opposition. We can count on our own newspapers. The old saying "The King can do no wrong" applies, and, right or wrong, they are

"for us", but, at the same time, the opposition will be criticizing us.

We had one of our Metropolitan Toronto papers send a reporter out to talk with us, and, as a matter of fact, that paper often does not see eye-to-eye with our present government, but they will make a story of it, and I hope will commend us for what we are doing.

A. They will right now, but if they find somebody writes in and says the Legislature is spending \$800,000 on Interim Committees, they will then write, "The Legislature spent \$800,000 on Interim Committees; twenty-one Committees of the Legislature were set up, and are spending \$800,000 for every conceivable thing, from smog to cucumbers".

They will also say, "The Senate will spend so much; last year they spent so much, and this year it is increased over last year".

And then somebody will see that, and will say, "So you fellows are going to spend \$800,000; my goodness".

We will not spend that much money on smog.

Q. But a person interested in smog will say you are spending \$800,000?

A. Yes, and what will we get? What will we do with this money?

I do not know whether you have seen any of our reports or not. I started to bring some, but I thought you had seen them. I will be glad to send you copies of some of our reports. I will send you all I can get, and as many as I can get. Had I known you had not seen them, I would have brought them with me.

BY MR. THOMAS (Oshawa):

Q. Mr. Rumford, you mentioned there was a desire on the part of the oil industry to say, "This is not our baby", and the automobile industry will say, "This is not our baby"; do you feel that up to now, you have had the co-operation of these people in respect to air pollution?

A. As I mentioned, they have spent \$25 million, doing something about it.

Q. But they did it reluctantly?

A. Oh yes, there was pressure brought to bear on them, and so they said, "Let us do what we can; otherwise we will be blamed; they will put the blame on us anyway".

Now we are getting information and co-operation from them, yes. They are saying, "We will do everything we can".

The automobile industry has sent their top

men out here, and they are working on a muffler, or other contrivance, for the purpose of eliminating these hydrocarbons, which are given off in the exhausts. Everybody is making contributions to it. There is no question about it. They are doing everything they possibly can at this point. I think that industry is conscious of that fact.

We are a little slow here, because we have not had the physical problem to deal with.

Q. What do you think of the people of Los Angeles being given an extension of two years, and allowing people to burn garbage in the backyard incinerators? Should that be controlled?

A. That is strictly local control. They have been burning garbage in Los Angeles. I do not think that is the best means of eliminating their rubbish. Personally, I think they are behind the times. But they cannot change it overnight.

I understand they do have restrictions on certain days. You do not always have smog in Los Angeles, and on clear days, they can burn it, and "get away with it".

But it is strictly a local problem, and I think it will work itself out. They have put restrictions on burning, until they are stopped

entirely. It is an over-all means of dispensing with trash and rubbish.

Q. Legislation followed the enforcement of these remedial measures; would it not be better to have it universal by the State Legislature, rather than by the local people? If it is by the local people, would the tendency not be to drive industry to locations where the restrictions are less strict?

In some of these areas, they do not enforce the regulations, and they attract industry from those districts which strictly enforce the regulations.

A. A Senator from Los Angeles introduced a Bill in the Senate, to establish a State-wide Commission on air pollution, to establish these regulations for enforcement, and to have in each area a State Enforcement Agency, rather than the regional actions which are taken at the present time.

There is a reluctance on the part of the people who live up in Siskyou County and in Madoc County, or someplace, where they are asked to make a contribution toward something they do not know anything about. They say, "Why should we pay tax money? We do not pay any money up here to keep our trees."

I think there is a phase where the State

can step in and give us an over-all body for research. I think that should be done. I think it is important to all the people in the State.

Industry is being driven out of these areas. They are afraid to go into the Los Angeles area; in fact, they do take a second look at all those places.

Sacramento is inviting industry of a nature which does not cause smoke. It bears all the costs, and they like that type of industry. At one time we were hoping to get that type of industry into this area. As yet, they could pass in the Legislature a unifying law, affecting all areas of the State, and affecting all phases of smog.

BY MR. THOMAS (Oshawa):

Q. Do you think it would be advisable to introduce that, because of the opposition from some people who are not greatly concerned about it, and think there would be no basis for it?

A. No. Even the Governor has said he did not think we should have State control.

BY MR. MURDOCH:

Q. All communities are desirous of becoming larger and better communities?

A. That is right.

Consider an area like Sacramento, where they

are not immediately affected by this condition.

It is in another geographic basin, and if smog were present, it could be another trap.

The fog settles in Sacramento in the latter part of November, and stays for six weeks, so you could imagine, if they had dense smog conditions, what might happen. People could even die, if it was of that concentration. That is highly probable, too.

The concentration they are getting now in Los Angeles is really unknown as to its quantity, but some day in Los Angeles they might be faced with that same situation.

That is what we are trying to bring out, that one day they may be faced with an emergency, and if we are able to cope with it before it happens, they will not have the same as they had in Pennsylvania and in London.

BY THE CHAIRMAN:

Q. Did not something happen in Pennsylvania in 1952?

A. Yes. Of course, there is that possibility here.

We want to expedite the idea of protecting the people and determining, if an air-conditioned

building could be used in case of an emergency.
What could be done, since they are so slow about determining the actual factors?

They~~y~~are working in the State Department of Health -- did you speak to Mr. Maga?

Q. Yes, we saw him yesterday.

A. Did he tell you about the tests in the Los Angeles area, in the nursing homes?

Q. No.

A. They have a number of old people in nursing homes who suffer severely under the smog conditions. Many of the old people pass out, and it has been noticed that many of them die during periods of high smog and heat.

So they are trying to determine if there is a co-relation between the factors of ash and smoke, and they are performing autopsies quietly on the lungs and other tissues, to determine if there is a harmful result physically on the human body.

They are not disclosing their information at the present time, because if they did, it would disrupt their whole experiment.

BY MR. BRANDON, Q.C.:

Q. That information was given to us, but the nursing homes were not identified.

Reverting to suggestion of a moment ago that California was not adopting the top legislation; do you not think that the State Legislature could adopt legislation over all of the areas, but make it applicable at present to certain areas only?

A. What was that question again, please?

Q. My question was this; do you not think that you could have over-all State legislation which would be applicable to all of the State, but to make it immediately applicable only to those areas where you have the situation immediately arising? In other words, make it applicable to the areas or districts such as Los Angeles, San Francisco, and San Diego, and if, as, and when another area should find similar conditions, then make it applicable to that area, and the same legislation would apply?

My reason for that is this: do you not agree that it would be just possible, if you did not have such over-all legislation, you might have a set of facts applicable in Los Angeles with certain requirements, and perhaps another set of requirements for San Francisco, and another set for San Diego, and elsewhere throughout the State. Then you would have industry coming into California which would know what the requirements were, and if the regulations

throughout the State were the same, they would know it, and would know that California has uniform regulations.

A. You are not too far wrong. They have in this State established water pollution areas, and that is State-wide, under State control. It is for some specific purpose.

Naturally, industry was quite concerned about this legislation, because all of the contaminants and pollutants resulting from the manufacture of products were poured into the streams, sulphur products perhaps, and many other things.

I am giving you this, because we will get to the same problem as it relates to air pollution, that is, pollutants which are poured into the air streams.

The pollution of the water was affecting the fishing, and the fishermen were disturbed, and so they set up these districts in the State, which were over-all State set-ups, and they tried to recommend, at the same time, that we do the same thing for air.

Those who were making the original studies on it, were perhaps a little slow in making recommendations.

I point out that there are those in the Legislature who feel the State should take a position, the same as the point you have mentioned in regard to emergencies.

As far as some of the Senators are concerned; it is not yet an emergency, and they are not ready to set up any more controls, because, in certain areas, where they can get large industries whose operations would not result in contamination and pollution, they would gladly accept those particular industries in that area, for employment reasons, amongst others.

We have a State-wide problem in California; no question about that. We have fluctuating inversions of air which extend all the way down the coast. Did you see the coast on your way up?

Q. No, we came up at night, and could not see it.

A. If you had come up in the day time, you would have seen a brown, concentrated inversion of air all the way up the coast.

Q. From San Francisco to Los Angeles?

A. Yes, all the way down. And this meteorological situation is not always contaminated with the same pollutants down the Valley. It may

be cotton lint and dust in the San Joaquin Valley. There they have a disease known as "Valley Fever" resulting from contamination in the air. It affects the lungs, and I believe, as do many others, that it results from contaminated air, lint, and other materials in the air. This Valley Fever turned out to be Coccidioidal granuloma. The doctor (Doctor Leggo) could probably give more information about it than I can. It is present in the Valley and it affects the lungs. So there is contamination throughout the whole State in some form or another.

BY MR. BRANDON, Q.C.:

Q. In other words, the inversion layer may consist of variations in its content, depending upon the particular area?

A. That is right.

Q. And the inversion layer itself may contain certain things?

A. Yes. They may vary because of the regional areas where you have high concentration and wind going in, or it may remain, as it does in the Los Angeles Basin, for days at a time; it might even remain there for days when we do not have the normal amount of wind.

Q. What reason would you give for there not

being the smog condition in San Francisco, as there is in Los Angeles? Why is Los Angeles worse than San Francisco?

A. We consider that the resulting smog comes from trash burning, industry and automobiles. We do not have a great amount of petroleum outlets for refineries as in the Los Angeles Basin, and we do not have the large concentration of automobiles they have in the Los Angeles Basin, which accounts for that.

Q. What would the proportion of automobiles be as between Los Angeles and San Francisco?

A. I think they have about two million automobiles down there.

THE CHAIRMAN: We will have to break this off, Mr. Rumford. I am sorry. We would like you to come to dinner with us tonight, and if anyone has any questions they may want to ask further, perhaps they can be asked while we are there.

There is nothing planned for this afternoon. We can just carry on as we wish, and I may remind you that this room will be open from now until nine o'clock, so come and go as you please.

---Whereupon the Committee recessed at 11:40 o'clock a.m., and reconvened at luncheon in the Bohemian Club, in San Francisco, California, at 12:15 o'clock, at which time there were present:

Mr. A. H. Cowling, Chairman,
Presiding.

Messrs. Brandon, Q.C.

Murdoch,

Elliott,

Thomas (Oshawa),

Gordon,

Dr. Frederick Evis, Secretary.

APPEARANCES:

Mr. H. Belyea, Ontario Department of
Health.

Mr. W. Byron Rumford, Member of the State
Assembly; Chairman,
Public Hygiene Interim
Committee of the
State Legislature.

Dr. Malcolm H. Merrill, Director of Public
Health, State of
California.

Dr. Christopher Leggo, Consultant in Industrial
Medicine, In-Plant
Medical Service; Director,
Eastman Kodak Processing
Laboratory, Palo Alto.

Mr. Norval Ayers, Public Information
Officer.

Mr. C. Eberts, Canadian Consul General.

Mr. George H. Blouin, Consul of Canada.

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Following the luncheon, the following
proceedings were had:

MR. EBERTS (Consul General): Gentlemen, I told you there would be no speeches, and there will not.

However, I would like to say how glad I am to meet the visiting Ontario group, and we are most grateful to the Americans who have taken the time to join us in the midst of their day's activities, and to have lunch with us. Some of them, by the way -- including Doctor Merrill -- were really presumed to be taking part in some activities today, as it is a State holiday.

THE CHAIRMAN: Let us keep this very informal. I would like to call upon Mr. William Murdoch -- who, incidentally, is our Party Whip at home -- and ask him to say a word on behalf of our group.

MR. MURDOCH: Mr. Consul General, Mr. Chairman, and gentlemen; I came here today a little bit apprehensive with regard to the protocol which must be observed, and referred it to some of my good friends, and the answer I received was "Well, here you are". We really are very happy to be with you here today. I will say that as visiting Canadian delegates, we have been treated extremely well in this State, since we arrived. We have found all the officials of the various departments concerned with air pollution

to be most helpful and most anxious to give us all the information they can, and I am very happy to think that in the province of Ontario, we have taken this step, before the situation becomes an emergency, that is, a study of the problems of smoke and air pollution.

We appreciate your kind hospitality here today, and on behalf of our group, I want to assure you who are present as officials of the State of California, and as representatives of our own country, and those associated with you, to extend our thanks to you for your courtesy and hospitality while we have been here.

I know I am speaking for my colleagues when I say that it is indeed with great reluctance that we are scheduled to leave your city this evening. I know I speak for everybody when I say that. Even at this moment we might persuade our Chairman to rearrange our plans, so we could stay a little longer.

I can assure any of our friends from the State of California, that if you ever come to the province of Ontario, our seat of Government is in Toronto, and we are always pleased to see our friends, and if you should go to Toronto, and want to contact one of the members of the Legislature, or any of the Departments, just go into the Speaker's Office,

as there is always someone there who can advise you how to get in touch with us, and we will be most happy to try and reciprocate the very kind hospitality which has been afforded us here today.

Finally, we appreciate your very kind invitation to join with you today. We have greatly enjoyed your company, and we shall be glad to say to the Canadian taxpayers that we have been treated so well by two prominent officials, and when I fill out my income tax next year, I will do so with much less reluctance than I have done in the past.

Mr. Chairman, I thank you for affording me the privilege of saying these few words. (Applause).

We regret, Mr. Rumford, that your Interim Committees are kept within the confines of the State, whereas our Select Committees are allowed to travel further afield, and if we can persuade the Chairman, the Deputy Minister and the Minister, that we are actually trying, perhaps we may be permitted to examine the smog conditions in London, England, or in the Ruhr Valley.

MR. RUMFORD: We have a resolution which we passed, by which we are allowed to travel, but we have the papers to contend with, and we have to prove that if we make a trip, it is for something really

worth-while, so we thought we perhaps had better not go, as our opponents might use it against us.

THE CHAIRMAN: Our people know we are doing a good job.

MR. ELLIOTT: And the reason is that we tell them we are.

---Whereupon the further proceedings of this Committee adjourned at 1:50 o'clock p.m., to reconvene in the City of Chicago, State of Illinois, on Thursday, October 13th, 1955, at 8:30 o'clock a.m.

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APPENDIX "A"

CHAPTER 2 - DIVISION 20, HEALTH AND
SAFETY CODE OF THE STATE OF CALIFORNIA

Assembly Bill No. 1

CHAPTER 632

An act adding Chapter 2 to Division 20 of the Health and Safety Code, relating to the control and suppression of air pollution.

(Approved by Governor June 10, 1947. Filed with Secretary of State June 10, 1947.)

The people of the State of California do enact as follows:

Section 1. Chapter 2 is hereby added to Division 20 of the Health and Safety Code, to read:

Chapter 2. Air Pollution Control Districts

Article 1. Creation and Functioning of Districts

24198. The Legislature finds and declares that the people of the State of California have a primary interest in atmospheric purity and freedom of the air from any air contaminants and that there is pollution of the atmosphere in many portions of the State which is detrimental to the public peace, health, safety, and welfare of the people of the State.

24199. The Legislature hereby finds and declares:

(a) That in portions of the State the air is polluted with smoke, charred paper, dust, soot, grime, carbon, noxious acids, fumes, gases, odors, particulate matter, and other air contaminants.

(b) That it is not practical or feasible to prevent or reduce such air contaminants by local county and city ordinances.

(c) That in other portions of the State the air is not so polluted.

(d) That it is necessary, therefore, to provide for air pollution control districts in those portions of the State where regulations are necessary and feasible to reduce air contaminants in order to safeguard life, health, property and the public welfare and to make possible the comfortable enjoyment of life and property.

24200. In each county there is hereby created an air pollution control district.

24201. The boundaries of every air pollution control district shall be coextensive with the boundaries of the county within which it is situated.

24202. An air pollution control district shall not transact any business or exercise any of its powers under this chapter until or unless the

board of supervisors of the county in which it is situated, by proper resolution, declares at any time hereafter that there is need for an air pollution control district to function in such county.

24203. The board of supervisors at any time on its own motion may hold a public hearing to determine whether or not there is need for an air pollution control district to function.

24204. The board of supervisors shall give notice of the time and place of a public hearing to determine whether or not there is need for an air pollution control district to function by publication once in a newspaper of general circulation not less than 15 days before, and not more than 45 days before such hearing.

24205. The board of supervisors may adopt a resolution declaring that there is need for an air pollution control district to function if from the evidence received at such a public hearing it finds:

(a) That the air within such county is so polluted with air contaminants as to be injurious to health, or an obstruction to the free use of property, or offensive to the senses of a considerable number of persons, so as to interfere with the comfortable enjoyment of life or property.

(b) For any reason it is not practical to rely upon the enactment or enforcement of local county and city ordinances to prevent or control the emission of smoke, fumes, or other substances, which cause or contribute to such pollution.

Upon the adoption of this resolution the district shall begin to function.

24206. A resolution declaring that there is need for an air pollution control district to function is sufficient if it finds that there is need for an air pollution control district to function, and finds in substantially the wording of Section 24205 that both of the enumerated conditions exist. No further detail is necessary.

24207. A copy of a resolution declaring that there is need for an air pollution control district, duly certified by the county clerk, is admissible in evidence in any suit, action or proceeding.

24208. As used in this chapter, "air contaminant" includes smoke, charred paper, dust, soot, grime, carbon, noxious acids, fumes, gases, odors, or particulate matter, or any combination thereof.

24209. The board of supervisors of a

county in which an air pollution control district has been authorized to transact business and exercise its powers, may from time to time appropriate funds to such air pollution control district which funds shall be deposited in the treasury of such air pollution control district.

24210. All such appropriations are legal charges against the county.

24211. Every air pollution control district is a body corporate and politic.

24212. Upon the adoption by the board of supervisors of a resolution declaring that there is need for an air pollution control district to function the air pollution control district in that county shall have power:

(a) To have perpetual succession.

(b) To sue and be sued in the name of the district in all actions and proceedings in all courts and tribunals of competent jurisdiction.

(c) To adopt a seal and alter it at its pleasure.

(d) To take by grant, purchase, gift, devise, or lease, hold, use, enjoy, and to lease or dispose of real or personal property of every kind within or without the district necessary to the full exercise

of its powers.

(e) To lease, sell or dispose of any property or any interest therein whenever in the judgment of the air pollution control board such property, or any interest therein, or part thereof, is no longer required for the purposes of the district, or may be leased for any purpose without interfering with the use of the same for the purposes of the district, and to pay any compensation received therefor into the general fund of the district.

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ARTICLE 2. OFFICERS

24220. The board of supervisors of a county shall be, and they are hereby designated as, and empowered to act as, ex officio the air pollution control board of the air pollution control district in such county.

24221. All county officers, their assistants, clerks, deputies, and employees, and all other county employees, shall be ex officio officers, assistants, deputies, clerks and employees, respectively, of the air pollution control district in the county by which they are employed. Except as otherwise provided in this article, they shall perform respectively the same various duties for the air pollution control

district as for the county without additional compensation, in order to carry out the provisions of this chapter.

24222. The air pollution control board shall appoint an air pollution control officer.

24223. The air pollution control board may provide for assistants, deputies, clerks, attaches, and other persons to be employed by the air pollution control officer, and the times at which they shall be appointed.

24224. The air pollution control officer shall observe and enforce, within his air pollution control district:

- (a) The provisions of this chapter.
- (b) All orders, regulations, and rules prescribed by the air pollution control board of the air pollution control district pursuant to this chapter.
- (c) All variances and standards which the hearing board has prescribed pursuant to Article 5 of this chapter.

24225. The air pollution control board shall appoint a hearing board to consist of three members, none of whom is otherwise employed by the air pollution control district or by the county. Two members shall have been admitted to practice law

in this State. One member shall be a chemical or mechanical engineer.

24226. The air pollution control board shall appoint one member of the hearing board for a term of one year, one for a term of two years, and one for a term of three years. Thereafter the terms of members of the hearing board shall be three years.

24227. The air pollution control board shall determine the compensation of, and pay from district funds, the air pollution control officer, all of his assistants, deputies, clerks, attaches, and other employees, and members of the hearing board.

24228. In any county having a system of civil service, the air pollution control board shall appoint the air pollution control officer, and the air pollution control officer shall appoint all of his assistants, deputies, clerks, attaches, and other employees, pursuant to such civil service provisions, except:

(a) If the civil service commission or body performing the functions thereof, finds that any person has been employed by the county or by any city within the air pollution control district for a continuous period of not less than six months prior

to the effective date of a resolution adopted by the board of supervisors pursuant to Article 1 of this chapter, in a position the duties of which, and qualifications for which are substantially the same as, or are greater than and include qualifications which are substantially the same as those of any position in the air pollution control district, and such person has attained permanent civil service status in such city or county position, the civil service commission or such other body shall certify, without examination, such person as eligible to hold such air pollution control district position.

(b) If the civil service commission or body performing the functions thereof finds that any person has been employed by the county or by an city within the air pollution control district in a position the duties of which, and qualifications for which are substantially the same as, or are greater than and include qualifications which are substantially the same as those of any position in the air pollution control district, at the request of the air pollution control officer, the civil service commission or such other body, may certify, without examination, such person as eligible to hold such air pollution control district position.

(c) This section does not apply to the appointment of members to the hearing board.

24229. All officers and employees of an air pollution control district are entitled to the benefits of the County Employees' Retirement Law of 1937, Chapter 3 of Part 3 of Division 4 of Title 3 of the Government Code, to the same extent as employees of the county. An air pollution control district is a district as defined in Section 31468 of the Government Code.

24230. If any person is employed by an air pollution control district after certification without examination by the civil service commission or similar body because of his employment in a position of similar duties by the county or by a city within the air pollution control district, for the purpose of retirement benefits and salary rates all time employed in such county or city position shall be considered as time employed by the air pollution control district.

24231. In enforcing the provisions of this chapter and such orders, regulations, rules, variances, and standards, the air pollution control officer of an air pollution control district is a peace officer.

ARTICLE 3. PROHIBITIONS

24241. The provisions of this article do not apply within any air pollution control district unless and until, pursuant to resolution as provided in Article 1 of this chapter, such air pollution control district may function and exercise its powers.

24242. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (a) of this section.

24243. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business

or property.

24245. This article does not apply to smoke from fires set by or permitted by any public officer if such fire is set or permission given in the performance of the official duty of such officer, for the purpose of weed abatement, the prevention of a fire hazard, or the instruction of public employees in the methods of fighting fire, which is, in the opinion of such officer, necessary.

24246. The air pollution control officer, during reasonable hours, for the purpose of enforcing or administering this chapter or of any order, regulation or rule prescribed pursuant thereto, may enter every building, premises, or other place, except a building designed for and used exclusively as a private residence and may stop, detain, and inspect any vehicle, designed for and used on a public highway but which does not run on rails. Every person is guilty of a misdemeanor who in any way denies, obstructs, or hampers such entrance, or such stopping, detaining, or inspection of such vehicle, or who refuses to stop such a vehicle upon the lawful order of the air pollution control officer.

24247. The Legislature does not, by the provisions of this chapter, intend to occupy the field.

The provisions of this chapter do not prohibit the enactment or enforcement by any county or city of any local ordinance stricter than the provisions of this article and stricter than the rules and regulations adopted pursuant to Article 4 of this chapter, which local ordinance prohibits, regulates or controls air pollution.

24248. The provisions of this chapter do not supersede any such local county or city ordinance.

24249. If it should be held that the provisions of this chapter supersede the provisions of any local county or city ordinance, such suspension shall not bar the prosecution or punishment of any violation of such ordinance which violation was committed when such ordinance was in full force and effect.

24250. Nothing in this article limits in any way the power of the air pollution control board to make needful orders, rules, and regulations pursuant to Article 4 of this chapter. Nothing in this article permits any action contrary to any such order, rule, or regulation.

24251. The provisions of Section 24242 do not apply to:

(a) Agricultural operations in the growing of crops, or raising of fowls or animals, or,

(b) The use of an orchard or citrus grove heater which does not produce unconsumed solid carbonaceous matter at a rate in excess of one (1) gram per minute, or,

(c) The use of other equipment in agricultural operations in the growing of crops, or raising of fowls or animals.

24252. Any violation of any provision of this article or of any order, rule, or regulations of the air pollution control board may be enjoined in a civil action brought in the name of the people of the State of California.

24253. Every person who violates any provision of this article is guilty of a misdemeanor. Every day during any portion of which such violation occurs constitutes a separate offense.

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ARTICLE 4. RULES AND REGULATIONS

24260. The air pollution control board of an air pollution control district may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of this chapter for the administration of such district, and may

perform all other acts necessary or proper to accomplish the purposes of this chapter.

24261. The air pollution control board shall not enact any order, rule or regulation until it first holds a public hearing thereon. It shall give not less than 10 days' notice of the time and place of such public hearing by publication in a newspaper of general circulation published within the district if such a newspaper is published within the district. If no newspaper of general circulation is published within the district it shall give notice of the time and place of public hearing by posting in a public place not less than 10 days before such hearing.

24262. Whenever the air pollution control board finds that the air in the air pollution control district is so polluted as to cause any discomfort or property damage at intervals to a substantial number of inhabitants of the district, the air pollution control board may make and enforce such orders, rules, and regulations as will reduce the amount of air contaminants released within the district.

24263. The air pollution control board may require by regulation that before any person

builds, erects, alters, replaces, operates, or uses any article, machine, equipment, or other contrivance specified by such regulation the use of which may cause the issuance of air contaminants, such person shall obtain a permit to do so from the air pollution control officer.

Insofar as the regulations do not grant an automatic permit for the operation or use of any article, machine, equipment or contrivance in existence upon the effective date of such regulations, a permit shall not be required without first affording the owner, operator, or user thereof a reasonable time within which to apply for such permit, and to furnish the air pollution control officer the information required pursuant to Section 24269.

24264. The air pollution control board may require that before the air pollution control officer issues a permit to build, erect, alter, or replace any equipment, that the plans and specifications show, and that the permit issued by the air pollution control officer require, that such building, erection, alteration, or replacement will be done in such a manner, and that such approved equipment be used as the air pollution control board finds will eliminate or reduce the discharge of any air contaminants.

24265. (As amended, effective Oct. 1, 1949)

A permit shall not be required for:

- (a) Any mobile equipment.
- (b) Any structure designed for and used exclusively as a dwelling for not more than four families.
- (c) An incinerator used exclusively in connection with such a structure.
- (d) Barbecue equipment used exclusively in connection with such a structure.
- (e) Equipment described in Section 24251; except that the Air Pollution Control Board of any county, any part of which lies south of the Sixth Standard Parallel South Mount Diablo Base and Meridian may at its discretion require operations described in Section 24251(b) to obtain permits. The board may promulgate such rules and regulations, as herein provided for, but in no event shall a permit be denied an operator, operating orchard or citrus grove heaters, if such heaters produce unconsumed solid carbonaceous matter at the rate of one (1) gram per minute, or less.
- (f) Repairs or maintenance not involving structural changes to any equipment for which a permit has been granted.

As used in this section, maintenance does not include operation.

24266. The air pollution control board may contract with the county, and may contract with any city within the air pollution control district, and the county and any such city may contract with the air pollution control district, for the performance of such work in the name of, and subject to the approval of, the air pollution control officer by the building department or other officer, department, or agency of the county or such city charged with the enforcement of regulations pertaining to the erection, construction, reconstruction, movement, conversion, alteration, or enlargement of buildings or structures, as will accomplish all or part of the purposes of Sections 24263 and 24264. The contract may provide for the consideration, if any, which the air pollution control district shall pay to such city.

24267. The air pollution control board may provide by regulation a schedule of fees not exceeding the estimated cost of issuing such permits and inspection pertaining to such issuance to be paid for the issuance of such permits. Every person applying for a permit shall pay the fee required by

such schedule.

24268. A contract entered into pursuant to Section 24266 may provide that fees for permits shall be paid to the city, the officer, department, or agency of which city issues the permit, and may be retained by such city in whole or in part as the consideration, or part thereof, for issuing such permits. Otherwise, all fees paid for the issuance of permits shall be paid into the district treasury.

24269. The air pollution control officer at any time may require from an applicant for, or holder of any permit provided for by the regulations of the air pollution control board, such information, analyses, plans, or specifications as will disclose the nature, extent, quantity, or degree of air contaminants which are or may be discharged by such source.

24270. If the holder of any permit provided for by the regulations of the air pollution control board within a reasonable time wilfully fails and refuses to furnish to the air pollution control officer information, analyses, plans, or specifications requested by such air pollution control officer, the air pollution control officer may suspend the permit. He shall serve notice in writing of such suspension and the reasons therefor on the permittee.

24271. Within 10 days after receipt of notice of suspension the permittee may file with the hearing board a demand for a public hearing as to whether or not the permit was properly suspended.

24272. The air pollution control officer shall reinstate a suspended permit when all information, analyses, plans, and specifications are furnished.

24273. The air pollution control officer may reinstate a suspended permit where, in his opinion, good reasons exist therefor.

24274. The air pollution control officer may request the hearing board to hold a public hearing to determine whether a permit should be revoked, or a suspended permit should be reinstated.

24275. Within 30 days after either the air pollution control officer or the permittee has requested a public hearing, the hearing board shall hold such a hearing and give notice of the time and place of such hearing to the permittee, to the air pollution control officer and to such other persons as the hearing board deems should be notified, not less than 10 days before the date of the public hearing.

24276. After a public hearing, the hearing board may:

(a) Continue the suspension of a permit suspended by the air pollution control officer, or

(b) Remove the suspension of an existing permit invoked by the air pollution control officer pending the furnishing by the permittee of the information, analyses, plans, and specifications required, or

(c) Find that no violation exists and reinstate an existing permit, or

(d) Revoke an existing permit, if it finds:

(1) The permittee has failed to correct any conditions required by the air pollution control officer, or

(2) A refusal of a permit would be justified, or

(3) Fraud or deceit was employed in the obtaining of the permit, or

(4) Any violation of this chapter or of any rule or regulation of the air pollution control board.

24277. Every person is guilty of a misdemeanor who knowingly makes any false statement in any application for a permit or in any information, analyses, plans, or specifications submitted either in conjunction therewith, or at the request of the air pollution control officer.

24278. Every person is guilty of a misdemeanor who builds, erects, alters, replaces, uses, or operates any source capable of emitting air contaminants for which a permit is required by the regulations of the air pollution control district when his permit so to do has been either suspended or revoked.

24279. Every person required by the regulations of the air pollution control board to obtain a permit so to do who, without first obtaining such permit, builds, erects, alters, replaces, uses, or operates any source capable of emitting air contaminants, is guilty of a misdemeanor.

24280. Every person is guilty of a misdemeanor who builds, erects, alters, or replaces, operates or uses any such article, machine, equipment, or other contrivance contrary to the provisions of any permits issued under regulations adopted pursuant to this article.

24281. Every person violating any order, rule, or regulation of an air pollution control district is guilty of a misdemeanor. Every day during any portion of which such a violation occurs is a separate offense.

24282. Every permittee who wilfully fails

or neglects to furnish information, analyses, plans, or specifications required by the air pollution control officer is guilty of a misdemeanor.

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ARTICLE 5. VARIANCES.

24291. The provisions of this chapter do not prohibit the discharge of air contaminants to a greater extent or for a longer time, or both, than permitted by Article 3 of this chapter or by rules, regulations, or orders of the air pollution control board, if not of a greater extent or longer time than the hearing board or a court after a hearing before the hearing board finds necessary pursuant to the provisions of this article.

24292. The hearing board on its own motion or at the request of any person may hold a hearing to determine under what conditions and to what extent a variance from the requirements established by Article 3 of this chapter or by rules, regulations, or orders of the air pollution control board is necessary and will be permitted.

24293. The air pollution control board may provide, by regulation, a schedule of fees which will yield a sum not exceeding the estimated cost of the administration of this article, for the filing

of applications for variances or to revoke or modify variances. All applicants shall pay the fees required by such regulations.

24294. All such fees shall be paid into the district treasury.

24295. The hearing board shall serve a notice of the time and place of a hearing to grant a variance upon the air pollution control officer and upon the applicant, if any, not less than 10 days prior to such hearing.

24296. If the hearing board finds that because of conditions beyond control compliance with Article 3 of this chapter or with any rule, regulation, or order of the air pollution control board will result in an arbitrary and unreasonable taking of property or in the practical closing and elimination of any lawful business, occupation or activity, in either case without a sufficient corresponding benefit or advantage to the people in the reduction of air contamination, it shall prescribe other and different requirements not more onerous applicable to plants and equipment operated either by named classes of industries or persons, or to the operation of separate persons; provided, however, that no variance may permit or authorize the maintenance of a nuisance.

24297. In determining under what conditions and to what extent a variance from said requirements is necessary and will be permitted, the hearing board shall exercise a wide discretion in weighing the equities involved and the advantages and disadvantages to the residents of the district and to any lawful business, occupation or activity involved, resulting from requiring compliance with said requirements or resulting from granting a variance.

24298. The hearing board may revoke or modify by written order, after a public hearing held upon not less than 10 days' notice, any order permitting a variance.

24299. The hearing board shall serve notice of the time and place of a hearing to revoke or modify any order permitting a variance not less than 10 days prior to such hearing upon the air pollution control officer, upon all persons who will be subjected to greater restrictions if such order is revoked or modified as proposed and upon all other persons interested or likely to be affected who have filed with the hearing board or air pollution control officer a written request for such notification.

24300. The hearing board shall serve a notice of the time and place of a hearing to grant

a variance or to revoke or modify an order permitting a variance either by personal service or by first class mail, postage prepaid, as provided by Section 15. If either the identity or address of any person entitled to notice is unknown, the hearing board shall serve such person by publication of notice once in a newspaper of general circulation published within the air pollution control district if such newspaper is published therein, otherwise by posting at a public place at the county seat within the district.

24301. The hearing board in making any order permitting a variance may specify the time during which such order will be effective, in no event to exceed one year, but such variance may be continued from year to year without another hearing on the approval of the air pollution control officer.

24302. If any local county or city ordinance has provided regulations similar to those in Article 3 of this chapter or to any order, regulation, or rule prescribed by the air pollution control board, and has provided for the granting of variances, and pursuant to such local ordinance a variance has been granted prior to the adoption of a resolution by the board of supervisors pursuant to Article 1 of this chapter, such variance shall be continued as

a variance of the hearing board for the time specified therein or one year whichever is shorter or until and unless prior to the expiration of such time the hearing board modifies or revokes such variance as provided in this article.

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ARTICLE 6. PROCEDURE

24310. This article applies to all hearings which either Article 4 or Article 5 of this chapter provides shall be held by the hearing board.

24311. The hearing board shall select from its number a chairman.

24312. The hearing board may hold a hearing in blank or may designate two or one of their number to hold a hearing.

24313. If two or three members of the hearing board conduct a hearing the concurrence of two shall be necessary to a decision.

24314. The hearing board not less than two being present may, in its discretion, within 30 days rehear any matter which was decided by a single member.

24315. Whenever the members of the hearing board conducting any hearing deem it necessary to examine any person as a witness at such hearing,

the chairman of the hearing board shall issue a subpena, in proper form, commanding such person to appear before it at a time and place specified to be examined as a witness. The subpena may require such person to produce all books, papers, and documents in his possession or under his control material to such hearing.

24316. A subpena to appear before the hearing board shall be served in the same manner as a subpena in a civil action.

24317. Whenever any person duly subpoenaed to appear and give evidence or to produce any books and papers before the hearing board neglects or refuses to appear, or to produce any books and papers, as required by the subpena, or refuses to testify or to answer any question which the hearing board decides is proper and pertinent, he shall be deemed in contempt, and the hearing board shall report the fact to the judge of the superior court of the county.

24318. Upon receipt of the report, the judge of the superior court shall issue an attachment directed to the sheriff of the county where the witness was required to appear and testify, commanding the sheriff to attach such person and

forthwith bring him before the judge who ordered the attachment issued.

24319. On the return of the attachment and the production of the body of the defendant, the judge has jurisdiction of the matter. The person charged may purge himself of the contempt in the same way, and the same proceeding shall be had, and the same penalties may be imposed, and the same punishment inflicted as in the case of a witness subpoenaed to appear and give evidence on the trial of a civil cause before a superior court.

24320. Every member of the hearing board may administer oaths in every hearing in which he participates.

24321. At any hearing the hearing board may require all or any witnesses to be sworn before testifying.

24322. Any person deeming himself aggrieved, including the air pollution control district, may maintain a special proceeding in the superior court, to determine the reasonableness and legality of any action of the hearing board.

24323. Any person filing such a special proceeding after any decision of the hearing board shall be entitled to a trial de novo and an independent

determination of the reasonableness and legality of such action in such court on all issues of law, facts, and mixed questions of law and facts and opinions therein involved.

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CH. 1185 (AB 1243)

Adds Article 7 to Chapter 2 of Division 20 of the Health and Safety Code.

Provides a procedure by which two or more counties having activated air pollution control districts may merge the several districts into one.

Each County constitutes a zone in the unified district and the board of supervisors in each zone constitutes the board of directors of the unified district.

County employees may act only in the zone comprising the county in which they are employed. The cost of the unified district is to be paid in proportion to the population of the several counties included in the district.

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P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

Dr. Frederick Evis, Secretary.

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VOLUME XI

Thursday, October 13th, 1955.

Chicago, Illinois.

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R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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E L E V E N T H D A Y

Chicago, Illinois,
Thursday, Oct. 13, 1955,
9:00 a.m

- - - - -

The further proceedings of this Committee recon-
vened pursuant to adjournment

PRESENT

Mr. A.H. Cowling, Chairman,

Presiding

Messrs. Brandon, Q.C.

Murdoch

Elliott

Gordon

Thomas (Oshawa)

Dr. Fred Evis, Secretary

- - - - -

APPEARANCES

Mr. H. Belyea, Industrial Hygiene Branch, Depart-
ment of Health, Province of Ontario.

Mr. Edmund Kosciuck, Combustion Engineer, Depart-
ment of Air Pollution Control, City
of Chicago.

Dr. H.A. Leedy, Director of the Armour Research
Foundation.

Mr. Morris Fisher)
	) Armour
Mr. Edward Fachtman	) Research
	) Foundation,
Mr. Samuel Radner	) Illinois
) Institute of
Mr. Fred Mommsen, Assistant Director) Technology
)
Mr. McGinley)

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This hearing was held in the Armour Research
Foundation of the Illinois Institute of Technology, Chicago,
Illinois.

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MR. FACHTMAN: Dr. Leedy, I guess we are "all
set". The gentlemen are filling out the forms, and I pre-
sume that may be done while we are talking

DR. LEEDY: O.k. I will start off here. My name
is Leedy, and I am the Director of the Armour Research
Foundation, the organization you are visiting now.

I want to say that we are very happy and honoured
that you gentlemen are visiting us in connection with your
activities, and interested in the air-pollution studies and
activities in this country

I do not know whether you have had any briefing

on our organization here, and that is why you probably came here today.

I might say that we, as a research organization, have carried on a large amount of work in the field of air-pollution studies. Our activities have been primarily in the technical areas, and studying the ways of reducing air pollutants, and the means of reducing air pollutants at the source. And when I say we have studied that, I want you to appreciate - as I know you do - that this is a very extensive problem, and we have not the answers here, but we have a very fine group who have carried on many fine research problems in this field.

Our activities here at Armour are many and diverse. We are doing research for industry in this country, and we are affiliated with the Educational Institute, the Illinois Institute of Technology, being primarily an educational organization for engineers.

We are, as the Armour Research Foundation, a separate corporation affiliated with this group, having the same Board of Trustees. We have no connection with the meat-packing industry, and you are not visiting any part of the Armour & Co. when coming here, but the Armour Research Foundation, although I might add that Mr. Armour, who founded the meat-packing company was the man responsible for the formation of the Armour Institute of Technology, which was merged with another school in 1940, and re-named "The Illinois Institute of Technology", but we retain the name "Armour

here, as an affiliated organization.

I might introduce what we have to talk to you about today by outlining a little bit of the air-pollution activities in Chicago. I have not had a chance to talk with you people here. Has any information been given to you about the background of the air-pollution activities in Chicago?

I think you know that air-pollution is a local problem, a problem which is different in every area, and a solution for the air-pollution problem in one city is by no means a solution for air-pollution problems in another city.

I understand you have visited the Los Angeles area, and I understand that the problem out there is that pollution is primarily^a gaseous type of pollution, which does not settle, but which does accumulate in their very peculiar situation out there, with their peculiar topography, where they have stagnant conditions of these pollutants, although they are created in relatively small quantities, but when they accumulate over a long period of time, can be a serious source of trouble.

Here in Chicago we have natural air conditions. We have a wonderful wind. We are called the "Windy City", and if it were not for the wind, Chicago would have a very serious problem too.

We burn a soft coal mined in Illinois, and it is an important part of our economy that we have developed effective means of burning this coal and removing, in large

industries, the fly ash and other things from the stacks, but if we were to have the stagnant conditions which exist in the Los Angeles area, we would have to have much more thought given to air-pollution than we have to do today

I might add an interesting comment - at least interesting to me. Consideration was given to the possibility of creating some sort of wind in the Los Angeles area. Maybe you learned of it when you were there, but the amount of power necessary to create even a five-mile wind, is more than the power developed in the whole Los Angeles area, so the solution is not practically possible, that is, to develop such a wind which we have naturally here in Chicago.

The people of Chicago have taken an interest in air-pollution for almost 85 years. Back in 1870, there was an interest in air-pollution in Chicago, and in 1881 the first smoke ordinance was enacted, and in 1891 a society for the prevention of smoke was formed here in Chicago, and this organization tried to point out, particularly to the railroads, the particular source of smoke at that time, that to prevent smoke from coming out of the stacks, the cost involved was not necessarily a financial loss. If you could prevent unburned coal from going up the stacks, you could get more heat, and it was economical to install the equipment to burn all the coal more efficiently, and, therefore, prevent the smoke going out of the stacks. This created some activity in the field of air-pollution.

In 1907, there was a new ordinance passed, and there was formed in the City a Smoke Department, now under the direction of Mr. "Tom" Casey, which was formed for the enforcement of this ordinance.

However, all through this enforcement period, this air-pollution control department has done more educating than enforcing, and I think they have done an excellent job in educating the people how to burn coal more efficiently, and how to prevent the smoke from coming out of the stacks.

In 1912 a committee was set up - and at that time the electrification of railway terminals was being considered - and this committee did a very thorough job in studying air-pollution in Chicago, and came up with a very voluminous report, which cost over \$1,000., giving a good picture of air-pollution in Chicago, and a good picture of the technical facts available at that time. As a matter of fact, upon reading that report today, you can see there is much information contained in it which is still available.

The Association of Commerce and Industry - whom I think you will meet today - has set up a "Clean-up Committee", which is investigating every segment of how to prevent air-pollution.

More recently some of the citizens banded together, and an Air-Pollution Prevention Association was formed, in 1951, and this Association obtained some monies from industry, and carried out a research program on air-pollution which has been conducted in Chicago, but even so, only a

relatively small amount of money was expended, as compared with places like Los Angeles.

This work was carried on at the Armour Research Foundation, and perhaps when the time is available some of the results of that program might be given.

Were you able to meet with Mayor Daley?

MR. BRANDON, Q.C.: Our plans were sort of "balled up", in fact, everything was "balled up" at the hotel.

DR. LEEDY: I am sorry, as our Mayor has been very much interested in cleaning up Chicago, and he has appointed a Citizens' Committee for a cleaner Chicago, and one of the sub-committees is the one I head here, and that is a sub-committee on air-pollution.

This committee has only been formed for a short time, and our efforts have been largely educational, and we have tried to point out that if we clean up the streets and alleys and parks, and prevent things from being strewn around, the dust fall can be largely prevented just by the process of cleaning up the city streets, and also by landscaping the city's lawns, which also will prevent the dust from being blown around.

That is something we consider to be a major problem in Chicago, because of our wind. The dust is circulated and it is estimated that from 50% to 75% of the dust which falls is re-circulated, and if we can prevent this dust from being re-circulated, we will cut down the dust fall appreciably. That is one of the aspects of this Mayor's Committee.

The Mayor's Committee is also engaged in a program with funds from the city and our Federal government, for making a more thorough study of air-pollution in Chicago, and the steps to be taken to reduce that air-pollution.

THE CHAIRMAN: Just on that point, Dr. Leedy, how are you getting on with the money from the Federal government? Are you getting it?

DR. LEEDY: We have not as yet. We are in the process of submitting our application.

As you may know, the government has set up a fund of twenty-five million dollars - five million dollars per year for the next five years - under the jurisdiction of the Department of Health, Welfare and Education, for air-pollution studies, and we are making application for some of those funds. We have not obtained them as yet.

Incidentally, we have had information that a similar proposition which we, as an organization in the Armour Research Foundation, have submitted, may soon be accepted, and we will be conducting a small program under this Federal grant. But the city has not obtained any funds as yet, but we are hopeful of doing so

I think they realize this is very new, and I do not know of any city group, as such, which has obtained any amount from the government as yet. In your tours, have you heard of any? Perhaps you could give me some information in that regard?

THE CHAIRMAN: No. That is why I asked the question. Everybody seems to be going along on local foundations today. In California the Assembly there granted \$250,000. for research and development annually.

DR. LEEDY: Are you going to meet with Dr. McCabe in Washington? He is heading up this program

I was going to say that in Chicago our air-pollution program is primarily a particulate matter, something which will be settled out, because the wind moves the gaseous matter, so it will not accumulate, and the dust that blows up causes the air dust to settle, and it is more of an economic problem. Today we have no evidence that it is a health problem. The cleaning is a permanent improvement picture, and the laundry problem is a source of irritation to the citizens of Chicago, they obviously would like to see a cleaner city from the standpoint of less particulate matter.

We know there are gaseous matters in the air. I do not think you will dispute this, as it is the result of my discussions with several people in Chicago. Here at the Armour Research Foundation, we can give you some technical information on how we have gone about making investigations, and some of the results.

Mr. Fisher heads up the group studying this problem, and we have a number of different projects.

I have a group consisting of 10 or 12 people, and this small number were very active, and now we have

around 11,000 people carrying on research for the information of our government.

I think that is all I will say by way of introduction. I am sorry I cannot remain with you. If you had arrived on schedule, I could have stayed longer, but I have another meeting coming up.

We appreciate your coming here, and I will now turn the meeting back to Mr. Fisher.

MR. FISHER: Our time in general at the Foundation is very limited, and while we have prepared some discussion on some of the highlights we are interested in the technical side of the air-pollution problem and some of the barest results which have been obtained in the work which has been carried out up to date.

If you gentlemen have questions you would like to ask, and if there are matters you would like discussed at this point, this may be a better way of doing it.

So we are open to any questions or suggestions, as to what you would like to have us say about the work of the Armour Research Foundation.

MR. BRANDON, Q.C.: What has been done in the way of elimination of smoke in the Chicago area?

MR. FISHER: That is a big question. We have some evidence that progress has been made in that direction, and there is work going on to find out more about the distribution of smoke, and endeavour to find a better way of combustion, and operation, so as to reduce

the amount of smoke, and also the local administration has tried to bring out ordinances and administrative procedure, up to date.

This is a current effort, and the results will not be available for a little time, but it is going on at the present time in Chicago. There is wide-spread discussion and work on the various procedures which we may adopt to help reduce the amount of smoke.

MR. BRANDON, Q.C.: I understand you have a set of ordinances, against having these back yard incinerators, and there is some sort of a penalty imposed.

MR. MOMMSEN: I do not know from where you could obtain that information. I might elaborate on some of the statements made by Mr. Fisher as to what has been done to eliminate smoke in Chicago.

Our educational work, through the air-pollution department of the city, is through the issuance of permits. Let us put it that way. If a fuel-burning equipment is to be installed in the City of Chicago, it is necessary for the firm of contractors to obtain a permit from the City of Chicago, which is passed on by the air-pollution division of the Department. The plan requires that a fuel-burning equipment be of such a nature that it can be used smokelessly.

Now, the Armour Research Foundation was, as you have heard, concerned with the analyses of the dust fall in the City of Chicago over a period of years, and we have

records in the Department showing the progressive fall of dust in the City of Chicago. In fact, in round figures, the combustible material which settled in Chicago today is about 12% of what it was 25 years ago, so that something has been done to reduce the smoke.

MR. THOMAS (Oshawa): When I was in the City Hall this morning, I noticed some figures which might apply to what you have said just now, that today you have 26 tons per mile, as against 106 tons ten years ago. I think it is a good step in that time, but how much oil conversion did you have in that time ?

MR. MOMMSEN: I would not hazard a guess on the percentage of plants which have turned to the use of oil. The mere fact that a plant has converted from solid fuel to oil is a factor, but smoke is still being emitted from the oil-burning plants.

MR. FISHER: I think we have some of this data, as a result of this research project carried out by the Foundation for the Midwestern Air-Pollution Association, which Dr. Leedy mentioned a little while ago.

One of the major objectives in that project, was to do some investigation work in Chicago, which was done by analyzing the previous measurements, and by a careful examination of some of the records in the Smoke Department of the City of Chicago.

I think Mr. Fachtman has some results today, and perhaps he could answer some of these questions.

MR. FACHTMAN: I will try to go as fast as possible.

In the first place, I think you people have joined the research people, because you have to find out how, what and why you can do a problem, before you can write an effective ordinance. You have to know your material. Is it toxic? Is it gas? Is it smoke? Does the stuff all settle on the ground, or remain in the air, and blow over into Michigan City across the lake?

We do not have a problem like Los Angeles. They have a very chemical problem. We do not have the meteorological problem like Los Angeles. You must consider all of the factors when starting to write your ordinance.

Another thing you should look at is the degree of control it is possible to obtain. If you write an impossible ordinance, you will not effect any relief. You will destroy the good will of the people and industry, so you must know how these people will react.

What is the present purpose of this? What control equipment is available? What kind of burning equipment is available? You cannot impose regulations which are too stringent. I am afraid of stringent regulations, but I want to know that something is being accomplished at the same time.

As Dr. Leedy pointed out, we have this dirt, but we do not know what it is, and we want the answers.

Now, the Midwestern group started out about four

years ago to get a technical basis for the control of pollution. They started out with what is our problem. That is about as far as we have gone. We know it is divided into, first, that which settles, and secondly, the other, which stays in the air. So we divided this into two groups, and then samples were taken in 24 stations throughout the City and records were kept. You can put each district under the microscope and look at it, and see ash coming from buildings, and ash from locomotives, and see paper fragments, which is how it operates in our dust centers. And you may find out there are iron particles, or zinc particles. And you begin to get some idea of where it comes from, and that resolves about half of our problem.

But a City like this has about 25% of its area in streets and alleys, and on top of that we have several thousand acres of vacant land, which are open to the wind. So, roughly, one half is open to dust settlement, and then we get this "regenerated dust" as we call it. The rest of it comes from smoke.

Put it this way; we, as a new department of air-pollution control, first carried out its duties in 1953. They wrote somewhere around 15,000 reports of inspections in the field, and they made a report of the stacks, with smoke or not, and the degree of Ringleman coming out of these stacks.

I think we have a record of all buildings in the City of Chicago, but we wanted all the information we could

get, and in order to determine the chimneys which were smoking, we took out all the required equipment. It turned out to be quite a task. They tried to find where it was coming from, in order to get the equipment there at some particular time, which we were able to do with a little co-relation of efforts.

Unfortunately, I only have one copy of the report. I would like to have a copy for each of you.

The first is a smoke report, and the units by each month of the year. This was when we started out in August, and went on through.

The smoke unit is given here (indicating), here (indicating) are the minutes of smoke density. Some of the others are in connection with the smoke fall, and the dust units by the months.

If you try to co-relate smoke dust with dust falling in a month, you cannot tie it down for a minimum of a year. If you work on it over four-years' average you can begin to co-relate. But there are only 24 units to cover 416 square miles.

MR. BELYEA: How do you account for the month of February?

MR. FACHTMAN: That is a peculiar thing. February is a short month, of 28 days, and there are two holidays, when the employees do not work.

MR. BELYEA: Would that give you a very high figure in March?

MR. FACHTMAN: Another thing is we may not have enough snow coverage, or too much snow, which has its effect on the atmosphere.

We cannot find the entire reason.

Another thing is, you might find that a variation of temperature from 6 or 10 homes, which put a lot of heat into a building for a short time, and they fire up a little too much, and you get a little smoke.

We went through a department store and a commercial building to find out what employees were responsible, and they reported quite a bit higher than any of the others.

In one industrial establishment, they did have a heating plant for their processing, and we went through and looked for smoke or dust, but we did not find very much. They did not emit dust in any large quantity.

Here (indicating) is another, where we broke this figure down by months, so that industry was reported more times than anybody else, although the apartment building beat this in March.

Here (indicating) is the breakdown of the figures received in connection with oil burning, which gave us a density of units per month higher than the others.

This one (indicating) is one we picked up on the rate of oil burning, but then they were changing over to 125 horse power

No. 3 here (indicating) is limited by our law, so an increase over No. 3 gives you some idea of how bad

these things are in a relative sense They could not use coal in the firing equipment

Here (indicating) we found nothing We are not happy about it. It does not show us too much, even if these other figures (indicating) were used, and if they were using a different coal than they were using

Many people do not know what kind of coal they are burning. We broke it down into 11 categories and the janitor did not know whether it was West K No 6 or West K No. 1, and the janitor could not know unless he could find some of the bills. However, we had the information so that we knew.

One of the others was the incineration where we had cheaper incineration with open incinerators and open fires, and it shows that incinerators, when not under control, smoke badly and cause a great deal of trouble.

MR. THOMAS (Oshawa): August is the low month, that is a fixed month?

MR. FACHTMAN: Yes, but do not take that into account, because some of the people who inspect the equipment are available for reading smoke. There are 10,000 around the district, and 5,000 of them on holidays. In the summer time you will have about the same number of reports coming in

I have just a couple more. As I say, we took the railroads and reported those. This (indicating) shows between 8 and 9 o'clock in the morning a lot of the commuter trains are coming into town, and that we have to correct our

readings. The curves are different with the various railroads, and we have 5 railroads into the City, all of them making smoke. If you had a couple of minutes more, I could go into the essentials of that

MR. FISHER: Yes, you might say a word about that. Before you do, I think it would be a good idea to point out that these graphs on which we put our readings, are supported by still incomplete data, information we are all still trying to get. We need a great deal more of it before we can come to any definite conclusions as to the situation.

This (indicating) represents the data reported out of the Midwestern Air-Pollution Prevention Association last year. The proceedings may not have appeared yet, but when they do they are widely publicized.

At the same time, we want to keep in mind that without the complete records, we cannot make a complete analysis of the situation.

MR. FACHTMAN; It was difficult to co-relate the information without having some findings on fire equipment, and some actual pollution, and we need more information, if we can get it, such as how far to go, as far as the City of Chicago is concerned.

One of the others added to the area-measuring problem, and they were attempting to put all industry into three types of areas, which would be set aside

We call these areas, "M-1", "M-2" and "M-3", and we have designated them as manufacturing districts. They

wanted to know what was the reason, so we divided them into "light industry", "medium industry", and "heavy-medium industry".

A light industry may be making some electronic parts; a medium industry may be such as paper and printing plants; and the heavy industry could be on the order of foundry equipment, and things of that nature

We were asked what would be the limit we would put up for these three different categories, and again we went into the smoke total, and the toxic matters in which we were interested

We put a man in each of the 3 districts and we based it on a per-acre of plant area. Others have based it on the processing in the plant, but we based it on the land survey figures, and we also made compensation for the fact that if you have stacks away up in the air, your pollutants get out and disperse differently than if you had a low stack, and it was also concerned with the amount of material going up the stack

We recognized the fact that perhaps they did not know whether they were in a heavy-industry area, or a lighter-industry area, or a medium-industry area, and it is helpful to have the public realize just what we are doing.

We are holding hearings on this subject, but it will take probably the next two years, before they are completed.

MR. KOSCIUCK: This is 1955.

MR. FACHTMAN: I think we have a copy here. It is supposed to be 3 pounds..

MR. MCGINLEY: The average dust fall would be one pound per acre That would make around 600 pounds per mile for one hour Twenty-four hours would be 24×600 , and when you take the acreage in the whole city, the dust fall we would forecast to be about 53 tons per month, which would aggregate quite a heavy amount

MR. FACHTMAN: It is different than estimating what comes out of a stack, because a great percentage of what comes out of a stack is blended with the air from different stations

These figures were subject to a considerable amount of research before we reached them at all. We did not do it haphazardly. That was necessary if it was to be of any value, but we feel they are very representative of what industry can do, and to arrive at these figures, we took all the published information we could get as to what a plant would emit, and the size of the plant, and we put it into pounds per acre, and we found those were figures published by the industry generally.

People who do not have air-pollution problems never hear anything about it, and the people who never do anything about it, never hear anything about it either So this step had to be taken in the belief that it would be a little abused. We based these figures on the information given us from industry.

MR. THOMAS (Oshawa): It seems to me you have given a great deal of effort to the pollutants you can see. Would you like to tell us about the pollutants you cannot see, such as come from automobiles and things like that.

MR. FACHTMAN: This was essential to the problem, and continues as a particular project, such as the analysis of materials, and so forth, and some of the properties in it, and to make some fundamental studies of the re-action of the materials .

MR. THOMAS (Oshawa): Are any reports available on that matter?

MR. FACHTMAN: Not yet.

MR. MURDOCH: Is there any enforcement, to impose penalties?

MR. FACHTMAN: We are not in the enforcing end of it

MR. MURDOCH: Are you very strong on the enforcement?

MR. MOMMSEN: I think we are firm in enforcing the ordinances, but we do not use the courts a great deal. We found we got better results through hearings.

I may give you a brief resume of how the department acts, when we find smoke pollution.

We have a group of men, who spend most of their entire time observing the chimneys of apartment buildings and industry, boats and locomotives, and who are trained to read the density of smoke very accurately, and they send

in reports of violations.

In the event of pollution, we call in a representative of the firm before the Hearing Board, with the idea of discussing the problems, not to persecute them, but to try and determine the reason for the smoke pollution.

Frequently - and again nearly always - after a discussion with the operating engineer, with the janitor of an apartment building, for instance, we are able to determine the reason for the smoke and we make recommendations.

Of course, many firms hire outside engineers to assist them in their problems. Or sometimes we make recommendations for improvements.

THE CHAIRMAN: On that point, have you the situation in connection with your ordinances where certain industries are exempt?

MR. MOMMSEN: No

THE CHAIRMAN: You have control over everything?

MR. MOMMSEN: Yes

MR. KOSCIUCK: We have quite a long trip ahead of us, as it will take us a little while to get to the Steel Company, so I am afraid that we will have to adjourn this discussion. Perhaps we can discuss the general questions on the bus. Leave the front seat open for the "mike", and everybody can hear any discussion that is going on, and further questions I think can be discussed on the bus.

THE CHAIRMAN: May I say a word on behalf of our group to Dr. Leedy, Mr Fisher, and others of your group,

that we thank you for having us here this morning, and taking time from your very busy schedule to answer our questions. I am sure you have given some information to us which we will find most helpful in our studies, in order to endeavour to bring about an up-to-date law in Ontario.

MR. FISHER: I would like to make one more comment.

Mr. Radner, who is new on the staff, has had a long background of experience in air-pollution control, and has played a part in some work done at the Armour Research Foundation over the past year.

We have made a rather extensive study of the background of air-pollution legislation and administration practices in this country

Mr. Radner will be with you gentlemen on a large part of your tour of Chicago, and while he did not get the opportunity to address you while you were here, if there are some points along the line you would like to discuss, he will be with you, and will be glad to be of any assistance that he can.

We thank you, gentlemen, for coming here.

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---Whereupon the Committee adjourned at 12:15 o'clock p.m., to reconvene for luncheon at the South Works of the Illinois Steel Company, Chicago, Illinois, at 1:00 o'clock p.m.

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A F T E R N O O N S E S S I O N

Chicago, Illinois,
Thursday, Oct. 13, 1955,
1:00 p.m

- - - - -

The further proceedings of this Committee recon-
vened pursuant to adjournment

PRESENT

Mr. A.H. Cowling, Chairman,

Presiding

Messrs. Brandon, Q.C.

Murdoch

Elliott

Gordon

Thomas (Oshawa)

Dr. Fred Evis, Secretary

- - - - -

APPEARANCES

Oscar Pearson - General Superintendent)
Kenneth E Dinius - Works Chief Engineer)

Riley R. Clark - Superintendent,)	
Industrial Relations	)	South
	)	Works
G A. Howell - Assistant to Chief Engin-	)	United
eer - Steel - Pitts-	)	States
burgh	)	Steel
	)	Corporation
Traver E. Hartill - Public Relations)	Chicago,
Representative, Chicago)	Illinois
Office)	

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---The Committee was entertained at luncheon at the South Works of the United States Steel Corporation, Chicago, Illinois, and at the completion of the luncheon, the conference adjourned to the Board room where the following proceedings were had:

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MR. PEARSON: I thought it might be interesting to you to have a copy of this (indicating) so you can see what is going on in South Works. Also, we have here a list of the people who are here today at our Plant. They are Mr. Kenneth E. Dinius, Works Chief Engineer; Mr. Riley R. Clark, Superintendent, Industrial Relations; Mr. G.A. Howell, Assistant to the Chief Engineer of Steel at Pittsburgh; and Mr. T.E. Hartill, Public Relations Representative in the Chicago Office, and myself.

First, the South Works would like to welcome you here today. We are happy to have you here visiting us. Our trip through the Plant was rather short, due to the

time allotted, so you did not see too much of the operations

I will say, briefly, that this is the third largest steel plant in the world, covering over 500 acres, employing 14,000, and producing annually 4,520,000 tons of ingots

If I may, I would like to address Mr Cowling, the Chairman of the group. What you may be interested in today with regard to the subject under discussion, may be presented better by you than by us, and if I could give you a little run-down of the work and activities going on in the Corporation, if you would like to hear that from an industrial standpoint ---

THE CHAIRMAN: Let us run this the way you suggested. What is going on at the Plant?

MR. PEARSON: I know you all have not met Mr Dinius, our Chief Engineer of South Works, who handles most of the problems and the facilities we have.

On my left is Mr. Howell from the Central Operation Office, and Mr. Clark, who is head of our Industrial Relations, and who has very good relations with the unions, and so forth

If you would like to have a run-down, I would ask Mr. Howell to speak of those things, as he is familiar with the various things in the Company

MR. HOWELL: Thank you, Mr. Pearson

First of all, I want to make a correction. They put me on this list as "Assistant Vice-President". I am

the Assistant to the Chief Engineer.

Air-pollution is considered to be quite a problem in the steel industry. There has been an enormous amount of things done, both in the nature of facility installations, and also in the nature of research studies, and we feel from that that we are on our way, with a couple of exceptions. We have a couple of stickers upon which we are doing research, and one primarily is the open hearth problem. There are no means to carry the fumes from the open hearth, and certainly it is not considered to be an economical project, because when speaking of the electronic precipitators, roughly, they cost about \$1/2 million per stack, and that problem is aggravated where you have coal and gas.

In the open hearth furnace, it is not a question of controlling combustion; it is these complex metalurgical reactions in the open hearth which give us our trouble, but primarily the trouble is due to the extreme fineness of the dust

We presently have a project at the Mellen Institute, where they are doing research in the field, not particularly in open hearth, but mostly in the method of air sampling, and also training the people throughout the steel industry in air-sampling technique

We have another project sponsored by the United States Steel at Harvard, which is a method of the distribution of slag filters which filters the dust, and at the

moment, it looks rather promising.

Insofar as the other facilities in the steel mill are concerned, I think we have pretty well acknowledged that we know how to do it, and in an orderly manner, we expect to install the facilities where we do not already have them installed.

We have just about 100% Dieselized - I know we have at this Plant, and at most other Plants. We cut over from coal-burning locomotives, and insofar as the heat pits are concerned, we have automatic combustion control.

The fly ash from the different operations; we now have the equipment to collect that.

So, as I said, before we consider controlling the emissions from the open hearth stack, which is our number one problem, we are giving it all we have. Not only the United States Steel, but all industry as well, because the entire industry is sponsoring a project by the Iron & Steel Institute to work on this problem.

That is a thumb-nail sketch of our control activities in the steel industry. I would be very happy to answer any questions any of you would like to ask - or at least attempt to.

MR. PEARSON: Mr. Howell spoke of the problem here of putting these precipitators on the open hearth furnaces in our companies, and we are speaking up into a large amount of money to do the job on the open hearth furnaces. It is a tremendous job to lay out the construction of jobs

built 35 or 40 years ago, or even 50 years ago, which are not conducive to installations in most cases, so you are talking about re-arrangements to get into this situation.

In the blast furnace area, which you have, of course, in Canada, we are going to wash all of our gases; we have primary washers on all the furnaces in this plant, and I presume in all others.

We are putting secondary washers in the kilns, and that is about 40% completed.

In the cindering plant, we are putting in electric washers.

There is one thing we should stress - and we know this has much to do with air-pollution - and that is the burning of raw coal and bituminous coal. We do not have to collect this matter in the plants today burning coal.

THE CHAIRMAN: Mr. Howell, you have told us you are doing a real good job of helping to eliminate this air-pollution and smoke from the Chicago atmosphere. We are not interested in the other aspects of it.

Could you tell us if the air-pollution people in Chicago think you are doing a good job.

MR. HOWELL: I think the air-pollution people of Chicago are represented here, and I would like to ask their opinion.

MR. McGINLEY: I would like to say we have always received full co-operation from this plant, and the other plants in South Chicago.

From 1926 to 1930 I was here, and we came out with the intention of installing more chambers. The prevention of smoke, fly ash and furnace slips in these furnaces, is our biggest problem.

I notice you said something about the slag wool filter. That would be something which came along after we got the checkered dapples --

MR. HOWELL: That is just in the open hearth.

MR. MCGINLEY: We worked here awhile, and we said "You will have to clean up your smoke altogether; we will put a blower in on the front end, and sort of camouflage it".

We worked on the prevention idea, and you have done pretty well. I think the City should go along with this Company in whatever they do.

MR. PEARSON: There is one aspect of this elimination of air-pollution, and that is the installation on furnaces of collectors. We have spent rather a considerable amount on our open hearths, and on practically all of our operations where any smoke or combustion might result, to the extent that I think we probably have better control of our operations today, and we know exactly what is going on much better than perhaps a great many people do.

We have given a great deal of consideration to that, and we think our instrumental control is probably as good as you will find anywhere, and where you would normally expect to find some conditions on account of the age of our

Plant, we have gone out of our way to provide these control items on our old equipment. I will be glad to show that to you, if you have the opportunity.

Every open hearth and slag pit, and every pre-heating plant is equipped with combustion control, and we have a crew to follow that, who keep the proper ratio, so we do not throw out smoke.

Of course, we have a selfish reason too, in that we do not burn as much fuel.

THE CHAIRMAN: How much do you figure your South Works Plant has spent on the removal of this air-pollution.

MR. PEARSON: I can give you some idea by items, rather than giving it in total.

We put an instrument on the rod sulking pit, which cost us in the neighbourhood of \$30,000.

MR. DINIUS: We have two holes, the same as we have punched here (indicating). That is one area alone.

MR. PEARSON: The dust catcher on the incinerator plant will cost us \$300,000. We have it on order and have the money to put on the dust catcher on the incinerator plant, and to buy deisel engines out here to replace the coal-burning engines, it will cost us from \$100,000. to \$120,000. We have replaced every coal-burner we have in the Plant. It would be difficult to mention it in dollars, but I would say that altogether it would run into \$5 million in the last five or six years on control. I think I can safely say that.

MR. THOMAS (Oshawa): It is obvious that the steel industry has spent a great deal of money. Would the residue have any value at all.

MR. PEARSON: In testing a great many of these gases, we are using the beneficiates. We would not throw them out.

MR. DINIUS: It goes right back through the process, and usually is combined with --

MR. PEARSON: The metallic content is pretty close to that of the original air.

MR. HOWELL: There again you have cost involved in processing the dust.

MR. BELYEA: Has your present system a bag plant?

MR. HOWELL: The trade name is "Dupont". It is similar to a series of small cyclones. We found that ineffective insofar as emissions were concerned, from the standpoint of colour, and we have made studies of what was still going up the stack, which indicated very little, 7-1/2 microns or something like that, which was too small for that type of cleaner, so we are putting these precipitators and cleaners in.

You asked about dollars. There is another item perhaps I could mention. It is necessary to put precipitators on our blast furnaces. We can operate with four. One precipitator costs us \$300,000 for one furnace and we have 11 furnaces. I think we have 4 or 5 equipped now.

MR. DINIUS: We have some with the scrubber type

THE CHAIRMAN: The City did not tell you to put those on?

MR. PEARSON: No. We worked very closely with them, however.

MR. MCGINLEY: You ran into trouble when introducing secondary air into your furnaces, and we were at a point where they claimed they were oxidizing the process, and supplying some of the material.

MR. DINIUS: I do not know where such processes would have been, except in the slab mill, or the re-heating furnaces.

There we have provided combustion control to the extent that out of our re-heating stacks, you never see any.

MR. McGRUBY: We had quite a problem there, and I was wondering if you overcame it, and you have explained that you did.

MR. ELLIOTT: Have you found it profitable to take material from the old slag pile, some of which has been there perhaps 15 or 20 years, and re-heat it ---

MR. PEARSON: We have some open hearth slag we can use today. We are using all we can, which represents about 50%, so we still have a disposal problem with slag.

No, it is not profitable to bring back the slag.

It is possible to work today out of some of these dumps.

MR. THOMAS (Oshawa): You mentioned the grade of ore you are getting today, and what the conditions are,

Would that add to your cost of filtration?

MR. PEARSON: Let me answer that this way; the grade of ore we are getting at the Mesabi is not as good as it was at one time. I think I mentioned that sometimes we get a tachonite deposit, which is a low iron ore deposit, about 35% or 30%. We will be beneficiated, if it gets to the blast furnaces.

MR. MURDOCH: Mr. Pearson, there are two principal phases of this smoke air-pollution with which we are concerned. One is the effect on all accumulated industries, which effect was important in a kind of a way. However, there is another and that is the direct complaints from citizens who feel they suffer and who feel they are suffering property damage, I mean the housewives who hang out their clothes, and unless they find out which way the wind is blowing, they get the wash all dirtied up, and in some cases they leave the doors of the houses open, and they become very filthy again.

As representatives of the people, we feel that everybody should have a fair "break", and we have run into that frequently in our own Province.

Have you had any complaints from any particular people who are residing to the windward of these stacks at certain times?

MR. PEARSON: We get an occasional complaint.

MR. MURDOCH: Are they widespread?

MR. PEARSON: I would not say that.

MR. DINIUS: If we happen to have a few days when the wind is from the wrong direction, for instance, and a bad slip in the blast furnace, and with the wind blowing off the Lake, it will carry the dust over the locality around here, and some might complain.

However, that does not happen very often.

MR. MURDOCH: When such complaints come in, would they come to you at the Plant, or to your group?

MR. CLARK: Some citizens in Chicago still do not know we have a Plant operating. Thank goodness for that.

MR. PEARSON: I think that goes both ways.

MR. MURDOCH: Is there any consideration being given to restricting the area around here, and prohibiting the building of residences in any area which may be considered as liable to suffer damage from the smoke stacks, for instance?

MR. CLARK: In the time I relieved on the complaint desk, I did not get anything like that. The people here have become more or less accustomed to it, and have accepted it, but there are cases where perhaps somebody moves into the neighbourhood, and they start to complain.

Another experience we have here is that we have not been able to trace any serious complaints, perhaps a mile and a half from this Plant. We cannot attribute it as being from the steel mills, or any particular Plant in the area.

MR. McGINLEY: I have come to the conclusion that the steel mills take all their own dirt. Your chimneys have a lazy draft, and it does not shoot the matter up into the air so that the wind will catch it and take it someplace else. It falls in this area.

MR. CLARK: We have one of the new filter service machines located on the filtration plant, where we take two samples a week. They are each of 48 hours duration, and are supposed to be fine samples of the constituents, but the report is they record less dust than the ones outside. The nature of the dirt is sulphur, which is released over the loop area.

MR. THOMAS (Oshawa): If most of it falls on property, would it not be blamed on the wind?

MR. CLARK: We have a good wind here.

MR. HOWELL: I think most complaints come from residents living in close proximity to the Plant, where the hydrogen sulphide discolours the lead.

We have not many here, but in Allegheny County, we have had many complaints of the discolouration of white paint, and so forth.

MR. McGINLEY: We blamed it on the repeater system for awhile.

MR. HOWELL: It is like Mr. Dinius has said; you occasionally get a blast furnace slip, and people will complain to you. These are of infrequent occurrence, and we do not like them any more than anybody else, because it

costs money when you have your blast furnaces slip, but as the beneficiation increases, I think the fewer complaints you receive.

MR. MCGINLEY: You used to get them three times a day.

MR. DINIUS: Furnace slips are something which are inherent in certain practices. I think the lining of the furnaces maintain a control, and most of them are avoided today.

MR. MCGINLEY: They are - oh, I know they are. Of course, we used to get them from all around the place.

MR. MURDOCH: Are there any fumes from unburned gases in your processing?

MR. DINIUS: We have cases of blast furnace gas. In order to avoid that being dispersed, anything of that nature, we have three burners with what we call "bleeders" on them, and it is burned all clean.

MR. MURDOCH: We spent some time in Los Angeles, and there we learned it might be possible, even in their case - and might be possible in any area in the future - that some new type of process may be evolved, which might act as a catalytic agent.

Although small in quantity itself, it may have a terrific effect because they are in the air, and perhaps producing conditions never experienced before

That is certainly fresh information from the men who have been engaged in research on this, because it opened

up an entirely new potential danger from air-pollution.

I think somebody said that one of these days we would be a lot safer under ground.

MR. CLARK: Coming back to complaints in general; there is a great deal of psychology in studying people. Not long ago we had a case of SO₂ damage just west of the airport. People were complaining that their vegetables were not growing. So an important group got together, and got to the petition stage, and they are blaming the Edison Company out there, because they have the highest stacks.

The people from the Board of Health went along, and we toured the area out there, and there was an area built over an old swamp land and people bought new homes, and were "sold a bill of goods" about the advantages of owning their own homes and they started growing gardens, but they did not know how to garden, and they got about 2-1/2 inches of brush, over about 4 inches of clay.

They blame it on the SO₂. They smell smoke in the air, but they do not know what it is.

It was in the nature of 1.3, but we questioned that, because we believe it is inaccurate.

You could detect a faint odour, and upon investigation, we found that the condition came from Joliet, or some place like that.

We wrote them a letter and pointed out that the SO₂ was not to blame, and we also pointed out to them what

they needed.

MR. MCGINLEY: When you gentlemen were in Los Angeles were you impressed with any lack of co-operation from the City officials?

MR. THOMAS (Oshawa): No, I cannot say that. We thought there was a keen desire to try and overcome the difficulty.

THE CHAIRMAN: To answer that question; it was our pleasure to visit the Union Oil Company. We had lunch there, the same as we have had with you today, and in the course of our questioning we asked some of the same questions we have asked you, for instance, how much money they had spent in the last 8 or 10 years in cleaning up the situation, and they said they had spent about \$8 million, and we asked how much they would have spent if the control district had not been there, and they said they would have spent about \$6 million anyway.

MR. MCGINLEY: I do not know how much industry they have there.

MR. ELLIOTT: It is heavy industry. Every known industry is there.

MR. MCGINLEY: In Chicago we received very good co-operation from all industry, except in very isolated cases.

MR. THOMAS (Oshawa): I will say, gentlemen, that during the course of our discussions down there, there was one doctor who said that some years ago, when

the problem became acute, blaming it on a number of things, one was the oil people, another was that it must be burning in the incinerators in the back yards.

I think my colleagues will agree there has been good co-operation between industry and the officials out there.

MR. PEARSON: I think a great deal of research work has to be done on this problem, and the steel industry I am sure is going to continue its efforts.

MR. MURDOCH: It certainly struck us as being a very serious situation. The people realized they were losing a lot down there. In the first place they were losing the beautiful view they formerly had down there, when it became foggy.

For years they have been inviting industry to the area, but now the Chamber of Commerce supports a move to keep industry out of the area, unless they are sure it will not add to the present air-pollution.

In regard to the damage from a health point of view; there are a lot of studies going on in regard to the health of the people, but they are not giving them much publicity, simply because they do not want to alarm the public.

It is a serious problem with that concentration of industry, but I believe they appreciate the efforts that are being made out there.

We feel we have one or two areas in the Province

of Ontario which could become rather dangerous at some time, so we are trying to consider methods of control work, and we appreciate all the help which has been given us in Los Angeles, San Francisco, and here..

MR. THOMAS (Oshawa): The air-pollution problem is demonstrated very practically down there too, because most of us had a certain amount of eye irritation, and it was very bad

MR. PEARSON: It has been brought closer to these people than in any other section, and we are probably doing more research. And the air-pollution control district, and various individuals, are going into this control system, very thoroughly.

THE CHAIRMAN: As you will realize, our time is getting along. You probably know by now that we are a committee of Ontario Members of Parliament, representing all industries.

I would like to call on the Member for Hamilton (Mr Elliott) where is located an important steel company, to express our thanks.

MR. ELLIOTT: Mr. Chairman and gentlemen; I feel right from the very day we arrived in the district, that we have had the utmost cooperation in every place to which we have gone.

Our job has been explained by our Chairman. We are trying to do it in two ways, and we went out to Los Angeles and San Francisco, and now we have come here, and

you have been very patient at the number of questions we have asked of you.

We are trying to learn things which will help our people back home to do a better job for themselves.

I also found that the chimneys spewing materials out into the air, more or less cause a disturbance for everybody in the area, and instead of the industries losing money, there are really by-products, with which they will make money for themselves.

I think you people have analyzed all the positions in your industry, and you have found you can take gases out of the smoke, and analyze them, and secure certain information, and I think our people back home can follow your example locally, and will eventually make more money out of it. That is a point we are trying to develop.

Some of our industrial plants we think know no more about the situation than we do, and when we get to them, we will find they are having trouble getting down to the rock bottom of the whole deal.

It was our opinion from what we found in Los Angeles that industry was going "all out" to try and do a good job in that part of the Country.

We found in one place they had developed incinerators, but are not putting in the smoke and ash out there, but are taking it out, under direction. When you get industry coming to that, I think they are really trying to do a good job.

We have in Hamilton the biggest steel mill in Canada, and they have gone a long way too. They have more than doubled their product in the last ten years, and expect to double it again, and are finding it necessary to double the acreage of their plant. But they will be facing a problem whereby they will be getting more gases going into the air, and some of these gases have been very injurious, and have set up some smog.

Formerly we had in the plant at home about 14 coal-burning engines which have been eliminated now, and turned over to Deisels. Yet the employees think the Deisel fumes are as bad or worse than they ever had with the coal smoke. I do not suppose you will agree with that, but it does take time to bring them to your way of thinking, and prove to them that they are wrong.

But there is some damage being done by fuel oil in the line of smoke, and damage is being done by the automobiles, and I think our group will find out the damage will not be caused by the Deisels, but by the furnaces. Some people believe that oil furnaces are cheaper, but are throwing off gases which they think are injurious to health. That is something upon which we have not yet reached a conclusion. We have had some answers "yes" and some "no". I do not intend to question you, because I realize this is your business and you are running it, and have done a splendid job.

The boys in Chicago have done a good job, picking

us up at the Hotel, although we did have to "jump through the hoop", but we had one of the finest police escorts in order to bring us out here today.

They have placed all their officials at our disposal, and are doing everything they possibly can to try and help us.

You people have provided us with a lovely luncheon, and then have taken the time to discuss the problem with us. We have learned a great deal from this discussion with you, and we hope that you have benefitted from some of the things you may have learned from us, and some of the suggestions we have made.

All that I have to say, Mr. Pearson and gentlemen, is that we thank you very sincerely and very heartily, and I include in that the boys from the Air-Pollution Control Board, and the people from the steel plant, for the help and interest you have afforded us today, and I am sure the people of Ontario would want us to say "thank you very much", and if you are ever up in our Country, come and see us, and we will try to entertain you as royally, as you have entertained us here (applause).

MR. PEARSON: Mr Chairman and gentlemen; there is a lot of truth in what Mr. Elliott has said. We realize there is still much to be done.

I would like to say that you have brought us as much information as we have given you, and we are most happy to have been with you today.

I hope you will come back and see us again.

(Applause).

---Whereupon at 2:45 o'clock p.m. the further proceedings of this Committee adjourned until Friday, October 14th, 1955, at 8:30 o'clock a m

APPENDIX "A"

From Mr. Thomas H. Carey, Director, Department of Air Pollution Control of Chicago, October 13, 1955.

POLICY AND PROCEDURE OF DEPARTMENT OF AIR
POLLUTION CONTROL FOR SMOKE ABATEMENT IN CHICAGO

The activities of the Department of Air Pollution Control are many and varied and while smoke abatement is not the only source of air pollution in Chicago, the Department recognizes that the processes of burning fuel and refuse is responsible for much of the settled dust.

Sampling devices of air pollution have no way of discriminating between dust particles of fuel origin or those of non-fuel origin. It is the problem of the men to study these samples and identify the particles gathered by these sampling devices. These studies require highly trained personnel and costly laboratory equipment and techniques. The figures of total dustfall or total particulate matter are but a general reflection of the overall picture of a city. SMOKE ABATEMENT AND CONTROL is one end toward providing Chicago cleaner air.

It has been estimated that approximately 45% of the city's settled dust can be attributed to products of combustion, such as smoke, flyash, soot, cinders, coke and charcoal. Smoke and other combustible material during 1954 constituted only 12.6% of the settled dust sample. These figures are from a survey and study of department records and analysis of settled dust samples conducted by Armour Research Foundation of Illinois Institute of Technology, which had been sponsored by Mid-western Air Pollution Prevention Association.

Following is a brief resume of activities and policies followed to enforce the ordinance and give Chicago the cleanest air possible in such a large industrial city.

A portion of the field inspectors are assigned almost exclusively to observations of chimneys serving buildings, railroad locomotives and boats. These men are rotated into different districts in order to avoid a pattern of regularity in observing various districts. After recording the violation an attempt is made to secure the cooperation of the party in charge to attain an immediate abatement of the nuisance. After the receipt of a written report of a violation written notice is given to the responsible party with the request of an appearance before the hearing board.

It has been the experience of the Department of Air Pollution Control that the stimulated discussions at these hearings are more effective in abating smoke than court action. At these hearings the representative of the offender is given an opportunity to discuss operational practices and equipment conditions with a department engineer. Individual instruction and expert advice as to firing methods, changes in furnace equipment or type of fuel used are given depending on cause of smoke.

In general, the fundamental idea underlying all work of the department has been not only to notify plant owners regarding the emission of smoke from their fuel burning equipment and insist that it be stopped, but to cooperate and to show them how to stop it, give engineering aid and assist in every way possible to that end.

Suits are instituted only where frequent violations occur and at plants where no cooperation is secured.

Plan Examination and Permits:

The ordinance provides that permits be issued by the Department of Air Pollution Control for all new fuel and refuse burning plants and for the construction of old ones and for repairs to brickwork on high pressure

boilers. It also provides for approval of plans of new buildings in which a boiler plant is to be located before work on building has begun. This affords the department an opportunity to start proper operation of the plant before building completion and assures a heating plant adequate for the prevention of smoke. It is at the Plan Examination Desk that the examiner can correlate all aspects of the fuel burning equipment and render advice regarding furnace designs and request additional equipment if needed.

ANNUAL INSPECTIONS OF FUEL & REFUSE BURNING EQUIPMENT

A portion of the department's inspectors spend most of their time making regular inspections of fuel and refuse burning equipment. Inspections are made annually. These inspections are made with a view toward locating physical defects which if allowed to develop may tend to create smoke. During 1954, 41,569 inspections were made and written notices recommending repairs were issued to 8,158 owners or agents. As a result numerous instances of fuel savings have been brought to the attention of the department. The amount of smoke prevented by this effort cannot be estimated. Suffice it to say smoke is always an indication of fuel waste.

COMPLAINTS AND REFUSE BURNING

The department receives 2,000 to 2,300 complaints of smoke and odor nuisances annually from residents and workers throughout the city. These complaints are investigated and action taken to abate same. Frequently abatement can be obtained by the engineer who visits the source of nuisance. Usually abatement is obtained by changing operational practices, by change of fuel or repairs to existing equipment. Sometimes additional equipment is required. Where abatement is not readily obtained written notice is given to the responsible party for appearance at the hearing board. As a last resort court action is taken.

It has been estimated that 70% of all nuisance complaints are due to burning of refuse - 40% due to burning of refuse in open fires by individuals.

Whenever a nuisance complaint originates from the burning of refuse in open fires the practice is discontinued.

Chicago ranks lower than any other comparable industrial city where dustfall and suspended dust samples are obtained and analyzed. This statement is not made with the idea of pointing a finger at other progressive air pollution control organizations but rather to justify the pride of the members of the Chicago Department of Air

Pollution Control of the City of Chicago in the results of their determined effort to help make Chicago the cleanest industrial city of the country.

About 25 years ago the dustfall in Chicago was about 326 tons per square mile per month. Of this, 72 tons or 22% was combustible material; mostly smoke and soot. Presently the dustfall is only 56 tons per sq. mile and only 12% of this quantity is combustible material. In short, the dirt in the City of Chicago due to smoke has been reduced 89% during a 25 year period along with a tremendous increase in industry.

The department is, we think, justifiably proud of this tremendous reduction which could only have been accomplished through the co-operation of the plant operators, janitors, engineers and fuel merchants. This is not the end of our efforts -- we hope in the not too distant future to see a reduction of at least 50% of the present contaminants.

Here is a summary of our 1954 activities in table form:

Chimneys observed	474,387
Chimneys reported	10,215
Chimney violations	3,449
Notices sent to Owners	9,598
Hearings	2,076
Repair and Improvement Orders .	8,514
Complaints	2,085
Complaint inspections	3,617
Instruction Visits	48,404
Suits instituted incl.	
Cafeteria Tickets	695
Total of Fines Paid	\$6,990.00

Building plans approved	1,193
Furnaces on plans approved	1,555
Permits issued	2,661
Furnaces approved on permits	1,646
Permit Fees	\$34,237.40
Annual Inspections.....	41,569
Annual Inspection Fees	\$215,932.70
Dust Fall Tons per sq. mi.	56.04

Some sources of air pollution in the Chicago

Area:

OPEN FIRES (smoke, odors, fly ash)
 BUILDING MATERIAL YARDS, COAL YARDS, JUNK YARDS,
 SAND PILES, DUMPS, (dust) (smoke) (odors)

LOCOMOTIVES -- STEAM & DIESEL (smoke) (fumes)
 (fly-ash) (dust)

REFINING PLANTS
 POWER HOUSES (smoke) (odors) (fly-ash) (fumes)

BOATS, TUGS & MARINE APPARATUS (smoke) (fly-ash)

AUTOMOBILES, TRUCKS, BUSES (smoke) (odors)
 (fumes) (dust)

SPECIAL WORK DONE BY DEPARTMENT

1. Chicago became the first city to ban the installation of "flue fed incinerators" commonly known as the drop chute type. Commercial incinerator plans are required to show approved smoke and dust suppressing devices before approval for installation.
2. Approximately 700 man hours devoted to study of other cities Air Pollution Ordinances and preparation of a new Ordinance by the department.

3. Active participation in the following

Meetings:

1. Air Pollution Control Association
(National Meeting).
2. Midwestern Air Pollution Prevention
Association.
3. Southern California Air Pollution
Foundation Meeting on Incineration.

4. A technical Article prepared by this department "Dustfall Trends in Chicago" was written into the Congressional Hearings on Senator Capehart's and Senator Kuchel's Bill S-2939 "Smoke Elimination and Air Pollution Prevention".

5. Fine particle matter in air study with the U.S. Public Health Service - started in May 1954. Conclusion of 1954 witnessed 119 samples taken - each sample is of a 24 hour period. The department has four monitoring Stations in operation at start of 1955. Chicago's summer months (July, August and September) rating is very good among the 24 cities engaged in this survey. This sampling program does not interfere or conflict with the dustfall measurement program maintained by the department since 1926.

6. Study of survey conducted by Illinois Department of Health in four Illinois cities - June 1948 to January 1949.

7. Test of American Iron and Steel Institute air sampler for recording hourly changes of dust concentrations in the air.
8. Study of the "Allies of Air Pollution" - sources of dusts and fumes other than fuel burning equipment.
9. Answering requests from approximately 15 City, County and State governing bodies in the United States and Abroad, as to the administration and technical aspects of this department's work.
10. Cleaner Air Week education and information drive, when approximately 9,000 special letters were sent to individuals and twenty Posters displayed in Lobbies of prominent Loop buildings - plus exhibit in Lobby of the City Hall.
11. Assigning a Combustion Engineer to devote full time for research into Chicago's Air Pollution problem.
12. Even though Chicago's total dustfall exhibited a slight rise in 1954, the combustible content dropped appreciably. The combustible content in 1954 was only 12.6% of the total dust fall of 56.09. This is the lowest it has ever been.

PROGRAM FOR 1955

1. Presentation of "New Air Pollution Ordinance" for Chicago.
2. Expansion of U.S. Public Health Service Particulate Matter Sampling from four to at least six Monitoring Stations.
3. Procurement of funds to purchase the following testing equipment for air sampling work:
 - 1 - Two high volume air samplers
 - 2 - Three, American Iron & Steel Institute, hourly Air Samplers and one Spot Evaluator for these machines.
4. Expansion of Research facilities into Chicago's air pollution problem.
5. Continued statistical studies of previous Air Surveys conducted in the past in Chicago to establish trend patterns.
6. Development of a program for better supervision of field Inspectors and Engineers.
7. Continue the education of the Public in the proper usage of fuels and fuel burning equipment.

Sample of Air Pollution Control Memorandum

TO: Architects, Construction Contractors,
Material Suppliers and Trades Allied in the
Construction of Incinerators.

FROM: Thomas H. Carey, Director
Department of Air Pollution Control,
City of Chicago.

SUBJECT: (1) Flue Fed Type Incinerators.

As of this date the Department of Air
Pollution Control of the City of Chicago will not
approve plans for construction of Flue Fed Type
Incinerators.

SUBJECT: (2) Prerequisites for Approval of Commer-
cial or Apartment Type Incinerator
Plans.

- a. Auxiliary heat, depending on per-
centage of moisture in material to
be burned.
- b. Combustion or subsidence chambers
of good design.
- c. Secondary air admission to furnace.
- d. Draft control.
- e. Chimney having minimum height of 40'
above established grade.
- f. Screen at top of chimney to have $\frac{1}{4}$ "
actual openings.

"THOMAS H. CAREY"
Director.

DEPARTMENT OF AIR POLLUTION CONTROL
CHICAGO - 1912-1954

A very monumental service was performed in 1912, by the Chicago Association of Commerce and Industry, with the undertaking of a Survey - Entitled "Smoke Abatement and Electrification of Railway Terminals" - published in 1915. A very intensive effort was made then, to study air pollution, and among the numerous projects scientifically undertaken were:

- A. Study of fuel used by classes of users.
- B. Amount of Smoke emitted by classes of users.
- C. Amount of total solid constituents in smoke by classes of users.
- D. Measurements of fine dust in the air.
- E. Analysis of dusts found on sidewalks.
- F. A Mobile Air Sampling Laboratory.

Actually, the foundation of this report was laid by a Mayor's Committee of 1908, and a second Committee of 1910 that carefully studied the report of 1908 and recommended that this investigation be made. On February 27th, 1910, the Presidents of seven railroads agreed to underwrite the cost and the monumental survey was underway - select group of 13 top Chicago Industrialists and Engineers under the leadership of

William Goss, Dean of College of Engineering, University of Illinois, formed the main committee.

One of the projects investigated thoroughly, was the estimation of the "Total Solid Constituents of Smoke from all Fuel Consuming Services by actual tests of fuel burning equipment of all types. Results tabulated are as follows:

<u>By Chemical Analysis</u>	<u>Tons Per Year</u>
Hydro Carbons (Tars)	11,824.8
Carbon	68,290.8
Mineral Ash	220,158.0
Sulfur	<u>4,117.4</u>
Total	304,391.0

In this total of 304,391 tons, the Hydro Carbons (11,824) and the Carbon (68,290) can be considered combustible - a total of 80,114 tons per year for a city area of 194 square miles, or 34.4 tons per square mile per year.

This report, then considered all the factors of air pollution. In a Chapter "Allies of Air Pollution", other sources of air contamination are given, such as, construction dusts, dirty streets and alleys, stored material, material in transit, unplanted vacant areas, burning of waste material, dumps, dirty roofs, and automobile traffic (no estimates were made of the amounts released by these sources).

These test results serve as useful tools in guesstimating dust present from other sources besides fuel burning equipment. These tools are:

1. 80,114 tons of combustible dusts emitted by fuel burning equipment.
2. 45% of sidewalk dust of 1912 came from fuel burning equipment.
3. 35% of sidewalk dusts to be of manure and organic debris.
4. 15% of sidewalk dust to be of non-fuel mineral origin.
5. The Overall Chemical Analysis of this sidewalk dust to be composed of 39.3% of combustible (carbon and volatile) matter.

The Department of Air Pollution Control has maintained since 1926, dustfall jars to measure the complete coverage of coarse dust being deposited in Chicago each month. This dust fall comes from all the sources mentioned above and fuel burning equipment. The total dustfall monthly average for 1953 was 53.6 tons per square mile per month, of which 8.48 tons per square mile was combustible dusts. This again is dust from all sources.

The Department of Air Pollution Control is constantly trying to increase its factual knowledge of air pollution in the Chicago area.

To measure progress a means of comparison is necessary - yardsticks are unnecessary. Turning the

clock back and comparing conditions then and now, is a means of measuring the changes that occurred over a span of time. The City of Chicago is fortunate in having the means of doing so.

The cleanliness of Chicago's air has changed. The Department of Air Pollution Control has records of dustfall dating to 1926 - when 326 tons per square mile per month fell. For 1953 it dropped to an average of 53.6 tons per square mile per month. This is a substantial reduction.

Using as tools; data obtained in 1912, and actual dustfall records 1926-54 we arrive at the following table of guesstimated trend.

DUSTFALL TONS PER SQUARE MILE PER MONTH

<u>YEAR</u>	<u>ACTUAL RECORDS</u>	
	<u>TOTAL DUSTFALL</u>	<u>COMBUSTIBLE CONTENT</u>
1912	286.10	64.5(X)
1926	326.41	73.26
1936	84.47	18.27
1946	65.15	14.95
1953	53.68	8.48

(X) - Calculated.

CALCULATED

<u>YEAR</u>	<u>COMBUSTIBLE</u>		<u>MINERALS</u>	
	<u>FROM FUEL</u>	<u>OTHER SOURCES</u>	<u>FROM FUELS</u>	<u>OTHER SOURCES</u>
1912	34.4	32.10	94.6	125.0
1926	65.04	8.22	181.95	71.2
1936	15.73	2.54	43.6	22.6
1946	12.89	2.06	35.6	14.6
1953	7.45	1.03	20.3	24.9

The years 1926 and 1927, when dustfall figures were higher than that of 1912, it is evident that the technology of fuel burning had not kept pace with the expansion of Chicago. It was not until 1934, that a real reduction was reached in Chicago's dustfall, and since that time a steady downward trend has been maintained except for the war years, 1942 to 1945. The great postwar expansion of the City's industrial capacity has not stopped this downward trend. It is also significant that the constituents of Chicago's dustfall has changed materially in the last sixteen year period of 1938 to 1953.

Employing the test results of the 1915 report, a guesstimate can be made that if not a single pound of fuel was burned in Chicago today, still approximately 25 tons of dust per square mile per month would still

5. Value of Industrial goods produced increased 1110% - \$18,300,000,000 from \$1,483,000,000.
6. Gas consumed in therms increased 800% - 1,103,000,000 from 122,000,000 therms per year.
7. Electricity used in KW hours increased 1520% - 8,823,000,000 from 544,000,000 K.W. hour per year.
8. Number of gasoline and diesel vehicles increased 3200% - 837,000 from 25,000 automobiles and trucks.

This expansion of Chicago's activity has occurred in a span of 40 odd years and the combustible portion of dust fall is steadily being decreased - in 1954 dropped to 7.06 tons per square mile per month.

In the 1912 Survey to establish facts with reference to the density of vehicle movements under normal daylight conditions in the more congested parts of the city, observations were made by the Committee in October 1913, covering 20 different localities. This careful survey in 1912 showed an average of 43 vehicles per mile of improved streets and alleys per hour causing abrasion of the streets of Chicago.

CONCLUSIONS in the 1912 Survey include the following:

THE IMPORTANCE OF ALLIES OF SMOKE IN ATMOSPHERIC POLLUTION: The facts already presented may be summarized as follows:

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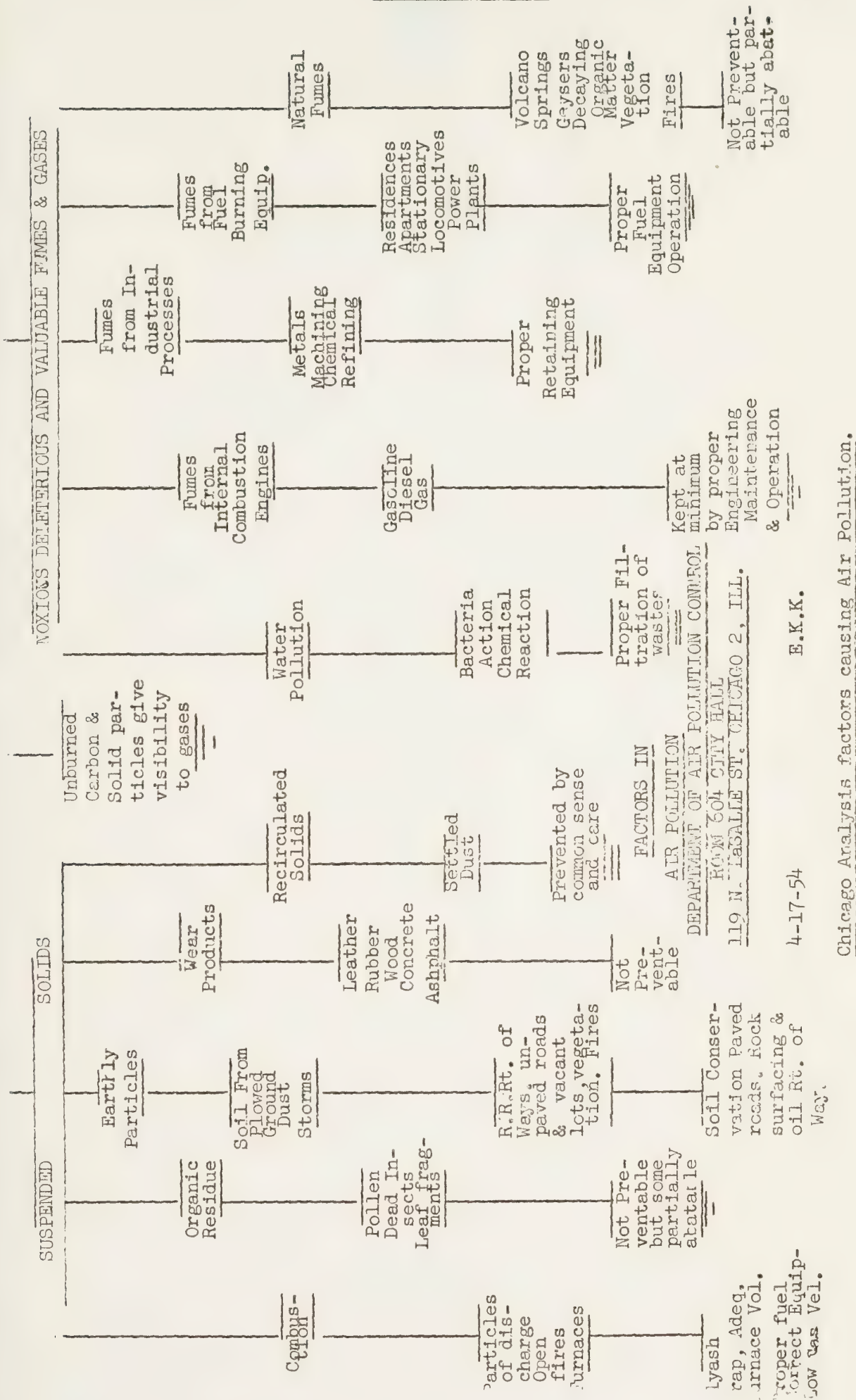
1. Streets and alleys represent approximately 20 per cent of the entire area of the city; approximately one-half of the thoroughfares are unimproved.

2. Atmospheric dust is not entirely of fuel origin: much of it - probably one-third or more of the total - arises from street traffic and from other activities of the city.

3. The amount of city dust which enters as a polluting agency into the atmosphere is a function of efficiency in city sanitation; it depends upon the standards of cleanliness observed in the maintenance of streets and alleys, and upon methods employed in cleaning.

4. Atmospheric pollution cannot be reduced to a minimum through attention to smoke abatement alone; in order to accomplish its reduction to a minimum, attention must be given to all of those processes and activities of the city which give rise to dust, or which deal with the collection and disposal of city dirt.

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ONTARIO

P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

Dr. Frederick Evis, Secretary.

—0—

VOLUME XII

Thursday, October 27th, 1955.

Sudbury, Ontario.

—0—

R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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THURSDAY, OCTOBER 27TH, 1955.

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T W E L F T H D A Y .

Sudbury, Ontario
Thursday, October 27, 1955
9:30 o'clock, a.m.

- - - - -

The Committee re-convened, pursuant to the
call of the Chairman.

PRESENT:

Mr. A.H. Cowling, Chairman,

Presiding.

Messrs. Elliott,

Hon. Mr. Kelly,

Morningstar,

Murdoch,

Thomas (Oshawa),

Dr. Fred Evis, Secretary.

APPEARANCES:

Mr. Leo Landreville, Mayor, City of Sudbury.

Mr. G.J. Monaghan, M.P.P. (Sudbury).

Mr. Rheal Belisle, M.P.P., (Nickel Belt).

Mr. Joseph Kelly, City Solicitor, City of
Sudbury.

Mr. R.H. Waddington, Executive Assistant to
Vice-President, and General
Manager, International Nickle
Company.

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HIS WORSHIP MAYOR LEO LANDREVILLE (Mayor of
Sudbury): Mr. Chairman, I crave your indulgence and
that of the members of your Committee in opening this
meeting. I feel as Mayor of this City that I must do
so, and I do so with a great deal of pleasure in extend-
ing to you and to the gentlemen who accompany you, a
heartiest word of bienvenu.

One must realize that in the early hours of
the morning, at which time we met you, it was still
rather damp, and if the warmth of our reception at
that time did not pierce through the atmosphere, I
want to assure you nevertheless that it exists, and the
next time you come to our City and to our area, I may
express the hope that you give us a little more
warning than 3, 4 or 5 days, so that we can well oil
the City gates and open them to you without the creak-
ing sound you may have heard this morning.

It is indeed with a great deal of pleasure
that we receive you here, cognizant of the fact that

your task is of the utmost importance to our area. What you are about to study affects indeed, I would say, man and nature.

It is a far cry today from the previous method of other governments in years gone by, in deciding on legislation and enactments strictly on the "say so" or "hear so" evidence of one or more men who may have travelled through an area, and I for one applaud greatly the tendency that our governments have today to go and inquire through a select Committee such as yours, on the site and gather all the facts and see for yourselves. It is a clear cut departure from the governments of 1910 and upwards for a few years after that, when legislation was put through by an office man somewhere either in Ottawa or Toronto.

So it is as a fact finding body that we receive you in our City. We thank you for coming to this City, we do hope that your stay here and the surroundings in which you will be living in the next two days will be conducive to a very fruitful report. Thank you.

THE CHAIRMAN: Thank you very much, Mr. Mayor, for such a hearty welcome. I am sure I speak for the members of the Committee when I say that I do not think anyplace else in the World the busy Mayor of a busy City such as Sudbury would get up and meet a trainload

of politicians at a time before 7:00 a.m., in my mind that is a record and we do appreciate it very much.

I know we are going to enjoy our stay here, I know it will be fruitful and interesting and very informative, Mr. Mayor, and on behalf of the Committee I thank you most sincerely.

I think at this time I would like to introduce the members of our Committee, so that you will know who is here and where they are from. We are glad of course to have as one of our Members the hon. Mr. Kelly, Minister of Mines for the Province of Ontario; Mr. William Murdoch, the Member for Essex South; Mr. "Bob" Elliott, the Member for Hamilton; Mr. "Tommy" Thomas, the Member for Oshawa; Mr. Ellis Morningstar, the Member for Welland; and our very efficient Secretary, Dr. Fred Evis.

Now I understand that Controller Monaghan, M.P.P., has a word to say, and also our Member for Nickle Belt, Mr. Belisle. Is that about the order? Incidentally, my name is "Alf" Cowling, from Toronto, and I have pleasure in being Chairman of the Committee.

G.J. MONAGHAN (M.P.P. Sudbury, and Controller, City of Sudbury), a witness appearing before the Committee but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Will you just proceed in your own way, please?

A. Hon. Mr. Chairman, Hon. Mr. Kelly and Committee members. It is indeed a pleasure for me, as the Sudbury member in the Ontario Legislature, to welcome you to Sudbury today. The people of this riding join with me, I know, in hoping that your visit will be profitable to you, in providing you with the first-hand information you require to make an intelligent study of air pollution problems in this area.

With due respect, and in acknowledgment of the fact the Committee was only recently re-constituted, I find myself hoping that your visit to this district had been arranged for a more seasonable time of the year. As you can see, the winter comes early in Northern Ontario. We have already had killing frosts and our first snowfall. The trees are now stripped of their leaves, the crops are harvested, and the gardeners are cleaning up their ground for the winter.

This is not a good time of the year to see the damage that can be caused by the sulphur fumes from our mining industrial plants. It is not necessary for me to tell you the major problem in the Sudbury district arises from the sulphur fumes - a by-product of our important mining and smelting operations.

Damage caused by sulphur fumes is nothing new in the Sudbury district. It can be traced right back to the days when ore was smelted in the roasting beds.

These were alternating layers of wood and ore built into roaring fires. Fumes from these fires stayed close to the ground and destroyed all surrounding vegetation.

The tall smokestacks you see today were built to carry these destroying fumes and gases high into the air where they would be carried away and dissipated by the air currents and the wind.

As you go around the city and district you will see these great plumes of smoke trailing across the sky. You will see that the tall smokestacks fulfill their intended function under favorable weather and climatic conditions.

Unfortunately there are times when the weather is not favorable. There are days when the atmosphere is heavy and these gases descend to the ground. There are days when a light blue haze hangs close to the ground and people unaccustomed to the sulphur fumes find it a bit difficult to breathe.

These are the times, Mr. Chairman and Committee members, when the greatest damage is done to the trees, crops and garden vegetation. I wish you could see the trees when the leaves turn brown and shriveled, as if scorched by a forest fire. Flower plants and leafy vegetable crops suffer the same fate. I believe it was just last year that the Sudbury Horti-

cultural Society was doubtful if it would be able to hold its annual show. The fumes swept across city gardens in the late summer and wiped out scores of gardens.

Perhaps some of you gentlemen are familiar with the statements made by Premier Frost in 1948 when he was Minister of Mines. He was speaking in the Legislature on sulphur fumes in the Sudbury area, and he quoted the following from a report by the Ontario Research Foundation:

"From data supplied by the Ontario Department of Mines, it is estimated that the amount of sulphur evolved in the form of sulphur gases from the Sudbury area averaged 920,000 tons annually in the years 1936 to 1940, and 1,256,000 tons annually through the years 1941 to 1945."

I am sorry I do not have the latest figures available on the quantity of sulphur gases now being evolved. It is not necessary for me to tell you that nickel production has not fallen off.

I do not suppose it comes within the province of this Committee to deal with compensation for damage from fumes. But I would like to leave this thought with you. It is that the legislation covering damage awards be amended to include payments for damage caused to city gardens. People of Sudbury and district prob-

ably pay upwards of \$20 or \$30 for seeds, plants, loam and fertilizer each year to plant attractive gardens. Their investment in home beautification is lost when their gardens are destroyed by the sulphur fumes.

We are aware, of course, that research is being conducted into methods by which the sulphur can be extracted from the fumes. We recognize that much is being done, but we also realize that much remains to be done.

I believe it is well established in British law, and to a lesser degree in Canadian law, that no one has the right to pollute the air. In its studies the Committee might, I respectfully suggest, seek out the law in this respect and incorporate it in its findings. The most recent case in Canada, I believe, concerned greenhouses and an industrial plant in St. Catharines.

In this submission I would not like to leave the impression that I am critical of the mining companies operating in the Sudbury district. But it is important that the Committee be made aware that the sulphur fumes from the mining industry are our No. 1 problem.

Perhaps the Committee members will have an opportunity to see the seared landscape around the city. They will see great areas of bare rock without

one blade of grass. It is the common impression of visitors that these expanses have been recently swept by forest fires. I can assure you gentlemen that it is sulphur fumes and not forest fires that have brought about this condition. It is doubtful that this land will ever again grow a green blade of grass or a tree.

Before I conclude my remarks, I would like to make passing reference to two minor causes of air pollution - railways and heating units.

One of the greatest offenders up until about five years ago was the Canadian Pacific Railway. As you know, we are located on the main east-west line of the C.P.R. There is a considerable movement of freight and passenger trains through Sudbury, as well as a great deal of switching activity in the railway yards.

Some five or six years ago the C.P.R. changed over from coal-burning yard engines to the diesel units. This contributed much to the abatement of the smoke nuisance in Sudbury. There has also been a gradual changeover from steam engines to diesels for the haulage of the passenger and freight trains.

Some of the coal-burning engines are still in service, however. Pollution of the air from these engines is created when the firing is done within the railway yard limits. On such occasions, great clouds of black smoke and soot roll over the residential areas adjacent to the railway yards. I think it would

be desirable to have all stoking of coal-burning engines done beyond the yard limits. Perhaps this could be best regulated through provincial legislation rather than municipal smoke abatement laws. Then there is the question of heating units. These offenders are located in the larger buildings within the city limits. Heating engineers say the dense smoke that rolls from these chimneys is usually caused by improper firing methods. The committee could be of assistance in studying this phase of air pollution and incorporating recommendations for its control. It is a problem that baffles most municipal councils because of lack of knowledge of heating engineering and uncertainty as to their powers to control it.

I have nothing more to say at this time, Hon. Chairman and Committee members. I conclude by repeating the welcome to the Sudbury district, and I assure you we will all be looking forward to the completion of your report for the Ontario Legislature.

Thank you.

THE CHAIRMAN: Thank you very much, Mr. Controller.
---The witness retires.

THE CHAIRMAN: Incidentally, friends, if there is anybody in the room who would like to say something, I would appreciate it very much if you would see our Secretary, on my right, and leave your names so that you can be called on in due course and we can hear

Everybody will have an opportunity to speak, but please see the Secretary.

MR. RHEAL BELISLE (M.P.P., Nickel Belt), a witness appearing before the Committee but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Belisle, our Member of Parliament for the Nickle Belt, would like to make some observations.

A. Mr. Chairman, Hon. Mr. Kelly and Members of the Committee, may I take this opportunity to express to everyone of you my sincere appreciation for your visit to the most important district in Northern Ontario. I know that you will realize after touring this vast district of Nickel Belt that it is of prime importance that your Committee on Air Pollution and Smoke Control find a possible solution to our problem. I hope that your visit to Sudbury will be an enjoyable one and that it will be profitable to all concerned. Even with all the smoke damage that you are about to hear you will realize that we have lived very healthily and no doubt some of you will remove your glasses to have a closer look at the pride of this district, our ladies.

Air pollution is a problem of great importance and it has been a subject of intense research dating back a great many years. Our homes, our cars, and our factories are sending into the air millions of

tons of smoke, soot, ashes, fumes, and vapors of all kinds every year. This air pollution, as it is called, is costing the nation vast sums of money or I would venture to say almost \$10 for every man, woman, and child. Experts say that unless more action is taken to prevent air pollution, we may be paying more money in property damage, crop losses, illness, and death. Our main concern here is pollution by sulphur fumes. Apparently, a great deal of attention will be focussed to remedy this solution in our immediate locality. Dating as far back as 1924 the Fumes Arbitration Act has been passed, but this act has proved, beyond doubt, to be far from meeting the requirements of the people. During your brief visit here you will have the opportunity of having a slight idea of the damage done. It is regretful that your visit did not take place in mid-August, when you could have seen the damage done to the farms of my riding by sulphur fumes. Not so many years ago, I can recall when the valley was the beauty of the district with its green trees and beautiful landscaping. Nowadays, my people believe that with the addition of another smoke chimney (the highest in the World) such a thing is practically impossible.

Q. How high is that new chimney, sir.

A. 637 feet, sir.

Since vegetation cannot survive under the

present circumstances, I firmly believe that it is high time that something be done to ease the situation. I am led to believe that International Nickel, along with the government of Ontario, are striving to remedy this situation, and let us hope that in not a too distant future we will have little to complain about.

Mr. Chairman and Committee members, in my way of thinking I believe that it is time that something be done. The old Damage by Fumes Arbitration Act of 1924 is out of date. Under the provisions of this Act the farmer whose crop is damaged is required to advise the offending company and the arbitrator within seven days of the fumigation, so that the injury may be observed. The majority of the farmers, growers or gardeners within a radius of fifty miles believe that their only hope is that the offer will be reasonable and from their past experience the calling of an arbitrator is not satisfactory. As you know, according to the Act if the arbitrator is not called within seven days he cannot act upon, and that I have learned personally. I believe that the amendments of 1937 and 1955 have not remedied the situation. Now I know that you will study the matter very thoroughly, because not only are the farm products affected, but also our forest resources. For this reason, I would like you to read pages 51 and 52 of the 1955 edition of A Year of

Achievement of the Ontario Mines, published by the Ontario Department of Mines. It deals with the: 1) Investigation by a special committee on forest damage by smelter fumes. 2) Observation of the extent of sulphur dioxide burning to the forests. 3) The determination of the pheophytin content in white pine foliage. 4) Permanent forest injury and increased mortality and reduction in growth by sulphur fumes.

The damage by fumes Arbitration Act should be amended and transferred from the supervision of the Department of Mines to the Department of Agriculture, because I believe that the Department of Agriculture is better qualified for this supervision. Second, since the early days of the mining industry, their efforts and contributions have been on a voluntary basis. I believe that the companies are studying the matter, but I think it is time that a new legislation be passed to force the companies to set aside yearly a certain sum of money for experimental use, so that within five years the problem will be solved.

It is an undeniable fact that the mines have brought prosperity to this district through the employment of thousands of men and also through generous contributions to all our civic projects, but we must remember that agriculture is the backbone of our country and it too must survive. This meeting today proves that

our government, as well as the companies concerned, intend to do something about this matter, and for this I am grateful. Let us hope that your findings will prove to be the cure that will benefit all Sudbury district.

I thank you.

THE CHAIRMAN: Thank you very much, Mr. Belisle.

---The witness retires.

THE CHAIRMAN: The City of Sudbury would like to present a brief to the Committee and it will be presented by the City Solicitor, Mr. "Joe" Kelly.

MR. JOSEPH KELLY (City Solicitor, City of Sudbury): a witness appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Kelly, would you mind coming over here and then everybody back here can hear pretty well what you are going to say?

A. Mr. Chairman, members of the Committee, I feel it is essential to file with the Committee copies of the City of Sudbury's submissions, and I would ask Alderman Rothschild, who is associated with me in this, if he would distribute copies of the City of Sudbury's submissions to the other interested dele-

gations.

I will briefly refer to these submissions by the corporation and possibly interject a few comments that may have been missed in the preparation of same.

The City of Sudbury appreciates the opportunity of making representations to the Select Committee on Air Pollution and Smoke Control at its Sudbury sittings and, although the time element has not permitted the City to assemble all the material that should be presented at this time to the said Committee, this memorandum is intended to bring before the Select Committee (in exceptionally broad general terms) the matters briefly discussed herein.

The Council of the Corporation of the City of Sudbury at its regular Council meeting of October 25th, 1955, upon receiving notification of the Select Committee's appointment for hearing, endorsed the following Resolution.

CORPORATION OF CITY OF SUDBURY

Moved by..... W. R. EDGAR

No. 55-500

Seconded by.. R. R. JESSUP

October 25th, 1955.

WHEREAS a Select Committee on Air Pollution and Smoke Control, of the Legislature of the Province of Ontario, has scheduled a public hearing at the City of Sudbury on October 27th, 1955.

AND WHEREAS an Interim Committee of the Council

of the Corporation of the City of Sudbury has made certain recommendations in relation thereto.

THEREFORE, THE COUNCIL OF THE CORPORATION OF THE CITY OF SUDBURY RESOLVES:

THAT representations on behalf of the City of Sudbury be made to the Select Committee on Air Pollution and Smoke Control at its hearing on October 27th, 1955, with particular reference to the following matters outlined herein.

(a) THAT the Select Committee investigate all aspects of gaseous fume control for the City of Sudbury and the surrounding area and make recommendations based on expert technical opinion as to the method of alleviation of the existing conditions.

FURTHER, that Provincial fume inspectors be appointed in conjunction with the Damage by Fumes Arbitration Act to assure that any amendments to the said Act based on the Committee's recommendations be enforced.

(b) THAT thorough study be given by the Select Committee in conjunction with the Board of Transport Commissioners for Canada and the Railway Companies concerned, with a view to elimination within the City of Sudbury of the smoke and soot conditions resulting from the use by the railways of fuel burning locomotives within the City of Sudbury.

(c) THAT the provisions of Section 388 and 399 of the Municipal Act being 1950 R.S.O., Chapter 243 and Amendments thereto, pertaining to smoke abatement, be rescinded and a special Statute of the Province of Ontario, defining and regulating smoke abatement, be enacted whereby it would become mandatory for all municipalities and localities affected to adopt the provincial regulations under such a Statute, rather than enact by-laws under the permissive legislation that presently exists within the Municipal Act.

FURTHER, that such a Statute should provide for the appointment of provincial inspectors to insure that the terms of any Legislative enactment as aforesaid be enforced.

CARRIED

October 25th, A.D. 1955.

The said Resolution has a three-fold purpose and it is respectfully submitted by the City that a general outline of the existing conditions presented to the Committee will enable it to observe in its visit to this area the said existing conditions and the need for recommendations to be devised and implemented to alleviate the said conditions.

The City realizes that the Committee has had an extensive background on air pollution and smoke

control through on-the-scene eye-witness experiences in many municipalities both in Canada and the United States of America where the air pollution problem has been remedied to some degree and effective measures adopted to ensure that the density of air pollution will be decreased still further, even though the manufacturing, industrial and commercial agencies primarily responsible for the said condition increase the scope of their operations.

The City of Sudbury appreciates that, with respect to the mining industries located in this area, it is a pre-requisite of their operations that a considerable volume of heavy smoke be emitted from their stacks, to be dispersed into the atmosphere. However, it has been reported that, through research, the noxious element in gases so emitted can be successfully reduced, thereby decreasing the density of pollution of the air by such gaseous fumes.

It is suggested that the Select Committee will certainly take notice of the methods of combating this gaseous fume problem that is not localized to the City of Sudbury, but exists in all major areas of industrial development.

However, as the Province of Ontario has now assumed leadership in this field, it is submitted that the regulations which may emanate as a result of

the Select Committee's recommendations should be brought under the sole jurisdiction of the Province, by the appointment of provincial inspectors, to ensure that legislation likely to result from the Committee's recommendations can be successfully enforced.

The City of Sudbury is affected by another source of air pollution in that the railway companies necessarily have cause to use fuel burning locomotives within the said City. It is understood that research has been undertaken by the railway companies, with a view to partial elimination of the smoke and soot conditions common to such fuel burning locomotives, but it has not been made known, insofar as the City of Sudbury is aware, of the exact results of such a survey.

Fuel burning equipment of the railway companies is governed under the Board of Transport Commissioners for Canada Order Number 5678, dated the 25th day of November, 1908, applicable to the Province of Ontario. Recently, an Air Pollution Advisory Board of the City of Toronto, with representations of other municipalities in attendance, has been giving a study to revision of the said Board Order in the light of present day conditions. The existing Order refers to an unnecessary or an unreasonable amount of dense smoke. Therefore, as the Resolution of the City of Sudbury suggests, the railway reports on air pollution from

the railways' operations in a municipality should be thoroughly studied, along with the recommendations of the Board of Transport Commissioners for Canada, and a scheme established whereby this particular aspect of air pollution could be considerably reduced by a thorough revision of the Board of Transport Commissioners of Canada Order.

Now on that point I would just add one further thought, that under this existing order, I think it is called General Order No. 18 of the Board of Transport Commissioners, it is permissible for a municipality to pass a by-law adopting that Board order and it then becomes effective within the municipality. However, the Board order is phrased in very general terms and the intent of it is to prevent "an unnecessary and unreasonable amount of dense smoke". Therefore, it becomes a question of who shall determine what is an unreasonable and unnecessary amount of dense smoke, so I suggest that the order is slightly out of date unless its terms are more accurately determined.

Basically, the air pollution and smoke control problem is the result of three salient features readily understandable by all parties.

1. The equipment being used in the fuel burning process is undersized for the particular pro-

ject for which it was designed.

2. The chimneys or stacks are defective in that they do not provide for sufficient draught to allow a complete combustion of the fuel.

3. An improper firing of the fuel burning appliance.

Within the City of Sudbury there are certain commercial operations, e.g., laundries, hotels, and hospitals, etc., necessitating the use of a considerable quantity of coal which, in turn, requires a thorough study of the method that should be adopted to obtain a more complete combustion of the fuel so used

In the City of Sudbury where various types of small secondary industries are located, all makes of boilers and settings are found. High volatile coal, when thrown in large quantities on the fire, produces smoke, that is, the gases created by the decomposition of the coal have been expelled at a faster rate than such gases can unite with the oxygen of the air, leaving the unconsumed gases to issue from the chimneys or stacks as black smoke. In most of such cases, much of the heat energy of the volatile content is lost. Whilst low volatile coal is used in a number of industries, as a rule this quality of fuel is not very satisfactory, a characteristic of low volatile coal being that the gases issue forth at a slower rate affording more

opportunity to chemically unite with the oxygen in the air, thus producing a more complete combustion with less smoke, but in many instances the combustion is generated at such a slow rate, that considerable difficulty is thereby experienced in maintaining the required steam pressure. Therefore, it appears that smoke abatement to a considerable degree is largely the task of education, informing the public of the best known methods of obtaining a more complete combustion of fuel. The task of the smoke inspector, therefore, is to sell the results of scientific research and knowledge of proper combustion which, in turn, will result in an economical saving from the operation of the mechanical equipment, and also eliminate the overhead sewage such as smoke, soot, ash, etc.

The third point raised by Sudbury City Council concerns the existing provisions of the Municipal Act related to smoke control and abatement. The provisions of the said Act are what might be considered fairly extensive and comprehensive but, notwithstanding same, it is suggested that, due to financial circumstances, most municipalities are unable to retain the required professional and technical services required for smoke control and abatement. It is suggested that a brochure be issued by the Province of Ontario outlining the extent and the regulations per-

taining to smoke abatement which should be applicable to all municipalities and localities. Further, it is suggested that the permissive legislation which presently exists within the Municipal Act should be replaced by mandatory legislation of the Province, whereby all municipalities and localities which contribute to the air apollution problem or are adversely affected thereby should be compelled to take the corrective measures which may be proposed in the Select Committee's report.

It may be argued that the municipalities should not surrender this aspect of municipal control to the province, but it is submitted that this is not a new departure and the effect of the Province adopting such a progressive step could be amply substantiated by the present state of uniformity of fire apparatus which now prevails throughout the province due to such apparatus being under the direct supervision of the Ontario Fire Marshal's Department. This has proved conclusively that the safety measures presently existing in fire prevention could not have otherwise been gained, had same remained under separate municipal domination.

I believe in this respect, Mr. Chairman and members, that one of the most recent innovations in conjunction with the Fire Marshal's department has been

a standardization of hose couplings throughout the province, so that it will be possible to use them in municipalities all over the province.

Also, with the conflicting legislation which presently exists between the Municipal act and the Public Health act - and here I refer to Section 81 of the Public Health act whereby it defines "nuisance" and is related to smoke - with respect to the smoke nuisance, there has been a tendency of placing the responsibility of air pollution from smoke on two different municipal agencies, thereby indirectly creating a shifting onus of the agency responsible for enforcement.

I think the Committee in this respect can appreciate that under the Municipal Act, the present smoke abatement provisions would be governed to a considerable extent by the engineering department of the building department of any municipality, whereas also under the Public Health act there is provision for the Medical Officer of Health to serve upon the offending party what may be called a smoke abatement notice, giving that party a certain time to remedy same. I do not suggest that it ever will occur, or has occurred in the City of Sudbury, but it is possible in some municipalities that you would have a conflict in that the responsibility would not be clearly defined, it would be passed from the Building Inspector's depart-

ment to the Medical Officer of Health's department, thereby losing efficiency with respect to the problem that existed right at that particular time.

It is regretted that detailed records of air pollution in the City of Sudbury are not made available as of this time to be presented to the Committee by the City of Sudbury, but, as previously pointed out, this municipality has been unable to acquire, due to financial consideration, the expert technical advisors that should be retained to give guidance to City Council in this respect. However, the City of Sudbury respectfully submits that the efforts of the Air Pollution and Smoke Control Committee, in making such a province-wide survey of the air pollution and smoke control problem, has and will obtain the most expert opinions necessary for such a survey, thereby resulting in benefit to all municipalities

Now, Mr. Chairman and members of the Committee, I must apologize, I am not a technical expert, I am not too well acquainted with the terms of the problem that is confronting this Committee, but if there are any questions of a general nature which Committee members would like to ask, I have Mr. Rothschild with me and I know he will be glad to help me answer them.

BY MR. ELLIOTT:

Q. Has the City of Sudbury a smoke abatement officer

at all on duty?

A. No, sir.

Q. You have not?

A. We have in our building by-laws, sir, a smoke abatement chapter.

Q. You have no committee, though, set up?

A. We have no committee set up under Section 399 of the Municipal Act.

Q. You have no control, in other words you do not do anything about it at all?

A. Well, sir, we have since 1936 records on file of the tests on pieces of glass of soot conditions that may be deposited during a given length of time.

Q. But there is no working organization behind the scenes in Sudbury to control smoke conditions at all, under the control of the City?

A. Not as I understand it.

BY THE CHAIRMAN:

Q. Mr. Kelly, you do not have a smoke abatement by-law?

A. We do have, as part of our general building by-law, sir, and it is presently under revision. The by-law was enacted I think, in the first instance, around 1932, and subsequently carried forward into a by-law in 1939, in practically the exact terms in which it was originally drafted. However, in taking a quick glance

at that by-law yesterday, I feel it is totally inadequate. It does not even include all the provisions that are now set out in Section 399 of the Municipal Act. It allows six minutes in an hour for smoke abatement, that is you must have a chimney emit heavy smoke for six minutes in an hour. Then it makes a reference to railway locomotives being governed under this order, in that unreasonable or unnecessary smoke shall not be emitted. But it is my submission that the by-law does not set out what is "unreasonable" or "unnecessary."

Q. You may not wish to answer this question as the Solicitor, but I just wanted to know, if in your opinion, one of the reasons, or possibly the main reason, why Sudbury has not been able to make many advances with this problem has been financial?

A. I would suggest that, with respect to the members of Council here today, that the financial consideration would be a very great detriment to the City's setting up a proper smoke abatement service.

Q. The reason I mention that, Mr. Kelly and Mr. Mayor, is that you are not alone in that respect. That seems to be the problem with most municipalities, and I have particular reference to Toronto. We have just lost the services of a very valuable, qualified engineer and air pollution and smoke control expert as chairman of our City

Advisory Board there because funds were not available to proceed with the research. That was my point in asking that question, Mr. Kelly. It seems to be a common complaint.

HIS WORSHIP MAYOR LANDREVILLE: I might inform the Committee that the Building Inspector of the City of Sudbury has taken it upon himself as part of his duties whenever there were complaints of sizeable nature arising out of, say, the heating performance of a hotel or other public building, to investigate and to report to Council, and then an order would go to abate that nuisance. I do not know whether Council will agree with me in that respect, they normally disagree, but I might say that the average residence does not in itself create much of a smoke nuisance, it is the public buildings and the large buildings, and that comes under the Building Inspector.

BY MR. ELLIOTT:

Q. Mr. Mayor, could we ask the Solicitor or the Mayor, in the residential area which do they burn most, oil or coal?

MR. KELLY: I suggest, in answer to the member's question, Mr. Chairman, that there is a very great tendency now to swing to oil. All your new construction is basically fired by oil

Q. Would you say, then, in a new district it will be

probably 80% or better of oil?

A. I think so.

Q. And in the old districts, probably 80% coal?

A. Yes, and still existing, sir.

Q. That is what we usually find, in about 80% of the older districts, coal, and oil in 80% or better in the new districts.

A. Yes.

HIS WORSHIP MAYOR LANDREVILLE: That is correct, sir.

THE CHAIRMAN: Any further questions of Mr. Kelly? If not, thank you very much, sir.

---The witness retires.

THE CHAIRMAN: Mr. R.E. Waddington, representing the International Nickel Company, would like to speak.

R.E. WADDINGTON, Executive Assistant to Vice-President, International Nickel Company, a witness appearing before the Committee but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. What is your official capacity, Mr. Waddington?

A. I am Assistant to the Vice-President, Mr. Chairman
Mr. Chairman and members of the Select

Committee of the Ontario Legislature on Smoke Control and Air Pollution, the International Nickel Company of Canada, Limited trusts that its observations which appear below will be of assistance to the Committee and respectfully submits as follows:

Sudbury District

The problem arising in connection with the disposal of sulphur dioxide in the Sudbury district is associated intimately with the growth and development of nickel-copper mining and smelting. The two major companies presently operating in the Sudbury Basin are The International Nickel Company of Canada, Limited and Falconbridge Nickel Mines Limited. This area is the greatest single source of mineral wealth in Ontario and in 1954 the Sudbury Basin produced about 58 percent of the mineral wealth of this province. Naturally, nickel-copper mining and smelting has made this area of Northern Ontario and the City of Sudbury one of the most prosperous regions in the province.

The International Nickel Company of Canada, Limited, is the largest producer of nickel in the world and, as this is written, ranks fifth among the copper producers. The Company is also a leading producer of platinum and its associated metals. These metals are obtained from the same ore from which are also extracted in limited quantities gold, silver, cobalt, selenium

and tellurium. Sulphuric acid and liquid sulphur dioxide are by-products of the Company. Within a radius of 30 miles of Sudbury, the International Nickel Company operates five underground mines; Frood-Stobie, Creighton, Levack, Garson and Murray, and also the Frood-Stobie open pit. In the same area the Company operates two smelters, one at Copper Cliff and one at Coniston, and a copper refinery at Copper Cliff.

In 1954 this Company made deliveries of 282,000,483 pounds of nickel and 253,275,426 pounds of copper and the value of this, together with the other metals, was \$352,273,825. By the value of its exports, which in some years have amounted to as much as \$170,000,000. and by its purchases of supplies and services, the Company makes an important contribution to Canada's economy. In recent operations in Canada alone it has, during a period of one year, paid over \$75,000,000 in wages and salaries to an average employee force of 18,500. During a recent typical year in its Canadian operations, the following were among the materials used: coal, 545,000 tons; coke, 160,000 tons; fuel oil, 20,000,000 Imperial gallons; lubricating oil and grease, 335,000 gallons; lumber and timber 42,000,000 board feet; steel plate and steel shapes, 20,000 tons; electrical supplies worth \$1,500,000; explosives worth \$1,900,000; and mechanical rubber goods of a

worth of \$653,000. Continuing its long-established program, The International Nickel Company has since 1947 allocated over \$15,000,000. for the construction of new homes for its employees, enlargement of their educational and recreational facilities and substantial support of various community welfare projects in the City of Sudbury. Over 1,000 fully modern new dwelling units have been built since 1947, and of these nearly 600 are located in the new community of Lively, between Creighton and Copper Cliff.

The ores of the Sudbury Basin consist of sulphides of nickel, copper and iron, together with rock. Sulphur played a vital role in the formation of these ore bodies because it was as sulphide minerals that the copper and nickel were deposited. However, it is this close association of sulphur with the nickel and copper which necessitates burning off the sulphur in order to recover the nickel, copper and other metals. This in turn brought on the problem of the disposal of sulphur dioxide. Until 1930, in keeping with the general practice in the industry, a great deal of the sulphur in the ore was burned to sulphur dioxide in open roast yards by heap roasting. In heap roasting the ore was stacked between layers of wood and each heap measured approximately 100 feet long, 40 feet wide and 8 feet high, and contained about 2,500 tons of ore.

The wood was ignited and usually burned out in about 60 hours, leaving the ore in a state of vigorous combustion. These heaps were kept burning for many months and as many as 100 heaps might be burning at one time. As the ore burned, it liberated sulphur dioxide at low levels which tended to drift across the countryside, damaging forest cover and other vegetation, especially within the immediate area.

The Mond Nickel Company operated a smelter and roast yards at Victoria Mines in the Sudbury District from about 1887 to 1913. This company then moved to Coniston and opened a new smelter with roast yards which continued the adverse effects noted above. In 1929 the company abandoned heap roasting in favor of sintering machines, but the smelter gas was discharged from a comparatively low stack.

The Canadian Copper Company (predecessor of The International Nickel Company of Canada, Limited) also operated a smelter with open roast yards at Copper Cliff in the early period. With a view to providing the more densely populated areas and the farming community with relief from sulphur dioxide, this Company's roast yards were moved in 1916 to O'Donnell in the Township of Graham. Until 1915 the tonnages of ore roasted were comparatively small, but in succeeding years, production increased rapidly

because of the rise in demand for nickel during World War I. However, in 1919 production at Copper Cliff had again fallen off to low levels and the smelter and roast yards were closed from the fall of 1921 for a full year until production was resumed on a reduced scale late in 1922. In the years 1928 to 1930 the old smelter at Copper Cliff and the roast yards at O'Donnell were replaced by a modern smelter with a 510-feet high stack. Production of metals was low during the early depression years of 1930 to 1933, but increased gradually from 1933 to 1936. In 1937 production capacity at the Copper Cliff smelter was expanded and a second tall stack over 500 feet high was erected to assist in the dispersal of the waste sulphur dioxide gas. The production of nickel and copper increased rapidly during the Second World War and, with the exception of the year 1946, has continued to show steady growth since then.

In 1929, in order to permit the orderly and effective development of the Frood-Stobie ore body by one operation, The Mond Nickel Company merged with the International Nickel Company of Canada, Limited, and the latter company acquired the Coniston smelter. At the Coniston smelter production had increased during the twenties but subsequently fell off and the smelter was closed in 1932. Operations were resumed in 1933

and production increased to relatively high levels during the late thirties and the Second World War. Since the close of the War, the Coniston smelter production has been lower. Recently, a new tall stack, over 400 feet high, has been erected.

At the present time therefore, substantially all the waste sulphur dioxide resulting from the operations of The International Nickel Company is dispersed at high temperature through tall stacks. This method of dealing with smelter gases where topographical conditions are favorable is accepted practice.

Summary with Respect to Effect of Sulphur Dioxide on Plants.

The Company does not take the position that no damage to vegetation results from time to time as the result of fumigation by sulphur dioxide. In the case of field crops where sufficient damage to leaf tissue takes place, some loss in yield may be experienced. In such cases the utmost care is taken to fairly evaluate the loss and to see that the owner is paid equitable compensation. During the years immediately subsequent to the passing of the Damage by Fumes Arbitration Act, the appeals for relief under this Act were relatively numerous. Most requests for arbitration, however, came from farmers in areas where the soil was impoverished. Mineral deficiencies caused leaf discoloration and

and diminished yield. These symptoms and results were incorrectly ascribed by the farmers to sulphur dioxide fumigations. As commercial fertilizers became available and their use adopted, this confusion was eliminated. In the result, during the past ten years only in eight instances was recourse to arbitration sought by a claimant against this Company, with all other claims on the International Nickel Company being settled by negotiation. It is apparent that the effect of the Damage by Fumes Arbitration Act has been to eliminate litigation and provide a more speedy and satisfactory resolution of claims arising from fume damage.

Q. Just on that point, Mr. Waddington, could you give us a rough idea of how many claims were settled in 1955, or how many last year?

A. A 10-year average, Mr. Chairman, was 507. That would be 10 years through 1954.

Q. Maybe 50 a year, roughly?

A. No, that is 507 per year.

BY MR. MURDOCH:

Q. How much money would that involve?

A. It would average slightly over \$100 a claim and would range anywhere from \$15 to, I cannot give you a top figure, but I have seen them in excess of \$1,500.

Q. One claim in one year?

A. I have seen that figure in some cases.

BY THE CHAIRMAN:

Q. And according to your report, it was only necessary in an average year that 8 out of 500 be referred to the arbitrator?

A. Actually, Mr. Chairman, there were only 8 in 10 years. There was less than 1 per year if you average it out.

SULPHUR DIOXIDE AND PUBLIC HEALTH

Because the effect of sulphur dioxide is much greater on plant than on animal life, specific information with respect to its relationship on public health is not readily available. However, for the guidance of the Committee, the results of a study by A. Anderson on the possible long term effects of exposure to sulphur dioxide on certain employees of the Anglo-Iranian Oil Company at Abadan, South Persia, are of interest.

This oil refinery is a large user of sulphur dioxide and concentrations of this gas in the atmosphere of its refining and special products plants usually ranged between 0 and 25 parts per million, but concentrations as high as 100 parts per million occurred sometimes. Two groups of workers were chosen. The contact group consisted of 135 men who had been exposed to sulphur dioxide for periods of time varying from 1 to 19 years, with a mean exposure time of 8.15 years. The

control group consisted of a similar number of men who worked in the same general areas but who had no recorded exposure to sulphur dioxide. The climatic conditions were the same for each group and they had added statistical advantages in being all of the same national origin, and all subject to similar conditions as regards working hours, clothing, housing, wage scales, and nutritional status. Each man in both groups was given a clinical examination. In addition, the vital capacity (an index of respiratory function) was estimated and a radiograph of the chest was obtained in each case. The report concludes as follows:

"Workers exposed to daily concentrations of sulphur dioxide for periods of time varying from 1 to 19 years were examined. Special attention was paid to age, weight, blood pressure, vital capacity and radiography of the chest. The daily concentration of sulphur dioxide varied between 0 and 25 parts per million. Occasionally, figures of 100 parts per million were recorded.

"Workers not exposed to sulphur dioxide but otherwise subject to similar working conditions and to similar living conditions were also examined, special attention being paid to the same details of examination.

"No evidence of adverse effects on health could be found."

CONCLUSION

In the foregoing the Company has described the physiological effects of sulphur dioxide based on evidence secured through its own investigations and by reference to independent investigators.

It should be stressed that the experience of the past 25 years is in marked contrast to the earlier period of the nickel industry's operations. The improvement has resulted from a continuous program of process development in which better control and utilization of sulphur dioxide has always been a consideration. In the year 1930 the Copper Cliff concentrator was placed in operation utilizing the flotation process to concentrate the minerals of copper and nickel. In the same year an entirely new smelting plant was completed at Copper Cliff. As a result substantial quantities of sulphur were discarded in tailings and smelter gases at high temperature were diffused efficiently through the new smelter stack, 510 feet high, at that time the tallest chimney in the British Empire.

With the new smelter in operation, open heap roasting was displaced by enclosed multiple-hearth mechanical roasters superimposed above reverberatory smelting furnaces fired by pulverized coal. All but two of the former blast furnaces were shut down. In order to fully utilize the new facilities for smelter fume dispersal, the gases were collected

in insulated flues so as to deliver them without loss of heat to the stack. The combustion gases from reverberatory smelting furnaces, much hotter than those from blast furnaces, made for hotter stack gases. The converters were provided with moveable hoods which reduced air leakage into the flues and thereby maintained high gas temperatures. During this same period the sulphuric acid plant of Canadian Industries Limited was moved from Coniston to Copper Cliff and sulphur dioxide gas from the new converters was delivered to this plant for the production of sulphuric acid

In 1936 the smelter was extended to provide for the separate treatment of nickel and copper concentrates. A new concrete stack, 512 feet high, was built and this had the advantage of providing an additional outlet from which to diffuse the smelter gases.

In 1948 the Company replaced the Orford process for the separation of nickel and copper in bessemer matte by a flotation process. The Orford process required coke for fuel. The new flotation process eliminated the gas which resulted from the burning of this coke.

In 1952 the Company introduced a new oxygen flash smelting process to treat the copper concentrate. This copper concentrate had been smelted formerly in reverberatory furnaces using pulverized coal as fuel

The adoption of the flash smelting process did away with the use of from 60 to 75 thousand tons of coal each year and also eliminated the volume of combustion gases from this source. The sulphur dioxide gas from the flash smelting process, instead of being diffused to the atmosphere, is liquified in a nearby plant of Canadian Industries (1954) Limited to produce liquid sulphur dioxide which is used by the pulp and paper industry, replacing imported elemental sulphur.

At its Coniston smelter the Company in 1929 built a new sintering plant with six sintering machines to replace heap roasting for the removal of sulphur from the ores. In the spring of 1955 the 200 foot Coniston smelter stack for blast furnace and converter gases was replaced by a new tall stack 400 feet high. The converter hoods are being redesigned so as to reduce cold air leakage into the flue and thereby increase the temperature of the gases to the stack.

This fall the Company will put into operation its new Iron Ore Plant located about one mile west of Copper Cliff. The stack at this plant is 637 feet high and the sulphur dioxide gas will be kept hot by the use of insulated flues throughout the plant. This new plant with its tall stack will provide an additional point of discharge for the sulphur dioxide produced from treating the ores of this district and thereby assist in the effective dispersion of the gas.

The process changes and accompanying improvements in the control and utilization of sulphur dioxide in the Company's operations have, and will, continue to result in lessening the potential ill effects of gas fumigations. It must be realized however that only as new processes can be devised does it become feasible from the standpoint of capital outlay and operating costs to recover increasing amounts of sulphur or its compounds. To develop such processes the Company is conducting an active and diversified program of research on both laboratory and pilot plant scale.

Although dealt with elsewhere in this brief, it is restated here for greater emphasis that the importance of the nickel industry to the Sudbury district and Canada at large is substantial. The International Nickel Company is currently paying out over \$200,000 per day in wages and salaries in Canada, over \$10,000,000 a year to Canadian railroads for freight and express, and contributing to the employment of thousands of people in Canada who earn their living by producing or supplying the goods and services required by the Company. Although some damage may be sustained from time to time as a result of sulphur dioxide, by comparison with the wealth which is being created it is submitted that such damage is small and is compensated for in a just and equitable manner.

All of which is respectfully submitted.

Thank you very much, Mr. Chairman.

BY THE CHAIRMAN:

Q. Just sit down there a minute, will you, Mr.

Waddington, and relax? Maybe some of the Committee have a question or two I have one. I wonder if you would care to enlarge on the fact that your report seemed to indicate that you favour taller stacks as one way of dispersing this sulphur. At one time they were 300 feet, then 400, and now there is one 637 feet high. Is that definitely a scientific, modern way of dispersing the fumes?

While you are answering that question, could you tell me - and it may have been covered here and I missed it - could you give us again the prevailing winds in Sudbury district?

A. The prevailing winds are from south west, Mr Chairman, so that the fumes travel to the north east

In respect to tall stacks, I think I can make the statement with backing in the technical literature, that dispersion at the highest elevation that is feasible and at as high a temperature as is feasible, is recognized as the most effective method of dispersion. There is no other way.

You cannot always use this method, if the topographical location of your plants is not suitable.

And of course the outstanding example of that was the Trail Smelter, where they were down in a valley with walls, if I recall correctly, 1,800 to 2,000 feet on each side, and tall stacks would not have given relief.

Q. In other words, then, if you get high combustion and a tall chimney, you are doing a lot of eliminating?

A. A high temperature, yes, Mr. Chairman

Q. High temperature, yes

A. And by "high temperature," I am thinking on the order of 450 - 550 degrees That gives buoyancy to the gas and forces it up.

THE CHAIRMAN: Are there any other questions gentlemen?

BY MR. THOMAS (Oshawa):

Q. Mr Chairman, I think the members of the Committee and all present this morning appreciate the brief. It is very informative. Naturally I suppose we are all interested very much in the health of the people, and I see where Mr. Waddington has quoted the experiences of the Anglo-Iranian Company in Persia. Is it your opinion that that would be a good comparison with the operation of the International Nickel Company?

A. No, I certainly would not wish to convey that inference, Mr. Thomas. I searched the literature for something that might be other than an opinion by our people, and that was the only thing that I could come

up with.

Q. Thank you very much.

THE CHAIRMAN: Well, if there are no further questions, thank you very much, Mr. Waddington.

MR. WADDINGTON: Thank you very much, gentlemen.

---The witness retires.

THE CHAIRMAN: Ladies and gentlemen, it is pretty close to a quarter after twelve. I know that there are others here who would like to address the Committee, but I would ask their kind indulgence until after we have had lunch. We will reconvene again in this room at 2:30. So shall we adjourn for this morning?

---Whereupon at 12:15 of the clock p m , the further proceedings of this Committee adjourned until 2:30 o'clock p.m.

A F T E R N O O N S E S S I O N .

Sudbury, Ontario,
Thursday, October 27, 1955,
2:30 o'clock, p.m.

The Committee re-convened, pursuant to
adjournment.

PRESENT:

Mr. A. H. Cowling, Chairman,

Presiding.

Messrs. Elliott,

Hon. Mr. Kelly,

Morningstar,

Murdoch,

Thomas (Oshawa).

Dr. Fred Evis, Secretary.

APPEARANCES:

Mr. Mike Solski, President, Local 598,
Sudbury, International
Mine, Mill and Smelter
Workers' Union.

Mr. R. H. Carlin, on behalf of Sudbury
and District Section of
Ontario Farmers' Union.

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THE CHAIRMAN: Ladies and gentlemen, we will bring the meeting to order and at this time we are going to hear from Mr. Solski, President, Local 598, Sudbury Mine, Mill and Smelter Workers' Union.

MR. "MIKE" SOLSKI, President, Local 598, Sudbury Mine, Mill and Smelter Workers' Union, a witness appearing before the Committee but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Solski?

A. Mr. Chairman and members of the Committee, we, of the Mine, Mill and Smelter Workers' Union, represent not only the great majority of the people of the district, but at the same time those people who work in the very industry which, without question, is the major contributor to the air pollution conditions that prevail throughout the district.

That, gentlemen, is why we more than welcome this session of your Committee here in Sudbury.

It is our profound hope that, as a result of this hearing, your Committee will not only become

thoroughly aware of the unhealthy atmosphere that hangs over this entire district, but will also carry that awareness to the provincial government. It is our equally profound hope that because of this knowledge, the government will enact the legislation necessary to enforce proper conditions on the offending industry here and thereby eliminate the air pollution caused by industrial smoke, sulphur, gas and dust.

In addition to the general conditions of air pollution and the resultant damage to the farms, gardens, lawns and woods of the district, as well, of course to the health and well-being of the population as a whole, the many thousands of men who labor in the smelting and refining industry of the district suffer especially from a high concentration of this pollution.

Because our organization, Local 598, Sudbury Mine, Mill and Smelter Workers' Union, represents those thousands of men employed in the Copper Cliff and Coniston Smelters and the Copper Refinery of the International Nickel Company and the smelter of the Falconbridge Nickel Mines Limited, we are in possession of information that points to the inadequacy of the equipment used by this industry to control and eliminate the sulphur fumes, smoke, gas and dust that pollutes the air breathed by the men who work in the smelters and the refinery.

Our people in the industry report that throughout every phase of the operation of smelting and refining there is not enough concern by management with the threat to the health and welfare of the employees caused by this air pollution. For example, we have discussed the gas conditions with management of International Nickel Company as it affects the workers in several departments in Copper Cliff Smelter, namely in the Reverb, Roasters, Converters, Sintering Plant, etc. Certain commitments were made to improve these conditions. However, to date, despite some improvements made by installation of new equipment and general repairs, the gas conditions still exist.

The present equipment, even if it were in good repair at all times is such that, depending on the wind conditions, it takes gas out of one department and blows it into another, and from those departments it flows throughout the whole district. Yet, it is a known fact that on special occasions when it is the wish of management, adjustments are made to the draught system and the department becomes clear of gas. These conditions prevail in comparable measure in the Coniston Smelter, in the Copper Refinery and in the Falconbridge Smelter.

It is our opinion that the only real measure of success will come with properly enforced legislation

enacted by the government on behalf of the health and well-being of the citizens of the province. This can only be done by forcing industry in this district to put into effect a similar process now in operation at the Consolidated Mining and Smelting Plant in Trail, B C. wherein the sulphur fumes, smoke, gas and dust are channelled and processed in such a manner that there is a minimum of these conditions in the plant, and what goes out into the stack is harmless to both humans and vegetation.

Because we deal mainly with the effects of air pollution, sulphur fumes, smoke, gas and dust on our members on the job, does not for one moment mean that we do not have at heart the interests of the population as a whole, in their farms in the rural areas of the district and in their homes in the urban sections.

There is no question but that many farmers of the district suffer heavy loss through sulphur fumes' damage and do not receive proper compensation through the Fumes Arbitration Act. There is similarly no question that there is no compensation for the loss of home gardens, lawns, shrubs, trees, suffered by all residents of the district. And, most certainly, there is no compensation for the loss of health by the people through air pollution, nor the damage to furniture,

homes and clothing suffered through the swirling dust storms created by the lack of concern of the industry for the welfare of the people in the district.

Furthermore, we do not restrict the blame for these conditions entirely to the major industry of the district. Also responsible are the two railway companies who operate their railway yards in the very heart of the City of Sudbury. Nor do we ignore the fact that those in the construction industry do little if anything to prevent dust conditions caused by indiscriminate tearing away of top soil and exposing the loose sand to the winds, or those who maintain huge piles of gravel, sand and the various components of cement in the open air without proper care for dust created by carelessness.

Gentlemen, it is our sincere hope that our small endeavour before you today will add somewhat to the total information you will have gathered here in your search for the causes of air pollution in the district.

It is our equally sincere hope that as a result of this information your Committee will be instrumental in convincing the legislature of the necessity of laws to enforce the control and elimination of air pollution caused by smoke, fumes, gas and dust.

We are certain that in your work you have

already learned that such control and elimination of air pollution not only is possible and practical, but that it has already been accomplished where the elected representatives of the people have accepted their responsibilities on behalf of the people. We are certain that the same results will be achieved here.

Thank you, Mr. Chairman and members of the Committee.

BY THE CHAIRMAN:

Q. Mr Solski, just before you sit down, there is a question or two which comes to mind. You refer quite often to the "health of the people in the district." I just wondered if your group had any scientific proof or any knowledge gained through research that health is affected by the fumes?

A. I haven't any data with me here this afternoon, Mr Chairman. We are of opinion, always have been and have maintained it throughout our discussions with the industry here, that the gas and dust contained in the mines and smelters are detrimental to the health of the people.

Q. There is just another point in which you might be interested. We have a Dr. Cunningham in our Provincial Health Department. He is in charge of the Industrial Hygiene Division, and they would be prepared to assist your group in making any scientific surveys along that

line. I wondered if in any way you had considered that?

A. I do not say that we have, but we certainly will.

Q. You might have your group consider that. His name is Dr. Cunningham, and he is with the Provincial Health Department, in charge of Industrial Hygiene.

Any other questions, gentlemen? If not, we thank you very much, sir.

---The witness retires.

MR. R. H. CARLIN, representing Sudbury and District Section of Ontario Farmers' Union, a witness appearing before the Committee but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr Carlin wishes to speak on behalf of some of the local farmers. Mr. Carlin?

A. Hon Mr Chairman, Hon. Minister of Mines, and members of your Committee:

To the best of my knowledge I will be the last person to speak here this afternoon and, as the Chairman said, I represent the Sudbury and district section of the Ontario Farmers' Union. I have not had the time nor the privilege of facilities, nor have my people, due to the short notice given, to prepare the

lengthy type of documents to which you have listened in the forenoon, but what we have to say we shall say as honestly as we can on behalf of those who are familiar to all of our people here in Canada, the farmers.

Now I hope, Mr. Chairman and other members of your Committee, that as you went out to lunch, or if not, at least before you leave our great city, the nickel city of the world, that you will be visiting International Nickel Company and Falconbridge Mining Company. The company officials are proud of it, and justly so, and so are their employees and so are all of the people, I presume, but I just thought that as you visit the plant, that as you come outside you take note of the smoke which carries the poisonous gas that is a bothersome problem to the farmers.

Again I say that it is on behalf of the farmers that I speak. I wish to submit as our only, simple, humble, little document, a resolution that was adopted at a recent general or special membership meeting of the Sudbury District Section of the Ontario Farmers' Union. That is the only document we have, apart from some pictures which we have had taken of burnt vegetation, that I trust will be of interest to all of you, together with some other exhibits.

If I may, Mr. Chairman, I should like to

read this resolution, and then supplement it by verbal statements. As I mentioned a moment ago, this motion was adopted at a special meeting by farmers who are members of the Sudbury District Section of the Ontario Farmers' Union, which includes farmers from as far east as Norval and St. Charles and as far west, if my directions are correct, as Whitefish and Worthington. The resolution reads as follows:

"WHEREAS: Immeasurable damage is being done each year to crops and farm implements, metal roofs and fences, and other relative farm equipment by sulphur fumes from International Nickel Company's smelter smoke for which the farmers involved receive inadequate or no remuneration; AND

WHEREAS: Thousands of dollars damage has and still is being done to private and public property, gardens, forests, and so forth, for which no compensation is paid at all;

WHEREAS: Said sulphur fumes gas is known to be a major health hazard and also injurious to animal life; AND

WHEREAS: The removal of said gas is believe to be both scientifically and physically feasible;
THEREFORE BE IT RESOLVED: That the Sudbury Districts section of the Ontario Farmers' Union call on the Ontario Government to the end that they

immediately enact the necessary legislation to compel International Nickel Company and Falconbridge Mining Company to remove this poisonous gas from their smelter smoke; AND

BE IT STILL FURTHER RESOLVED: That until such legislation has been passed and in force that an impartial Arbitration Board consisting of equal Company and Farm representation and an impartial chairman, be established and empowered to deal with all such damage by sulphur fumes claims that may arise; AND,

BE IT STILL FURTHER RESOLVED: That all claims, irrespective of existing laws, rules or regulations, be promptly paid for on a basis commensurate to the amount of damage done by said sulphur fumes."

That, Mr. Chairman, is the only written document we have to present to you. As I said a moment ago, I would like to supplement that. I am sure that each member of the Committee, particularly if he has driven in by car, would notice, as I did when I first came into Sudbury, how barren its mountains are and its valleys, that were once green with grass, pine and other trees. We are not too much interested in that, and when I say "we" I mean the farmers, because we know that the timber barons cut the timber, and we presume that the timber was put to a useful purpose.

We would have less complaint about the mines operating and still doing damage, again if there was proper remuneration paid for the damage done. We do not believe up to date that has been the case.

I was struck, when I went out to the country the first time, in 1942 - I am a comparatively new resident in this city - to find that the complaint was the same from all sources of the farming communities out there: "What can be done regarding the sulphur fumes' burn?" I saw, -- I did not get it second hand, -- great farms, great crops of oats, barley, potatoes and gardens that were green and fresh as they are in any other part of the country at that time of the season, June and July, and you would go out again in a week's time to find that they were bruned black, as we will show it in a moment in Colourchrome pictures.

Now I am not an agriculturist, I am the son of a farmer. I am not a scientist, I am not a biologist, nor are the people for whom I speak, the farmers. They are working farmers who know something about their profession. They are sons of farmers, and when they are told that this damage is not due to sulphur fumes' burn, it is, to say the least, most confusing to them, because they see their brothers outside of the sulphur fumes-infected area, growing good crops on the same soil, using the same fertilizer, the same

mechanisms and everything else, but here in the sulphur fumes-infested area their crops are burnt.

It makes me think of the man who is full of aches and pains and who goes to the doctor and the doctor says: "You are physically fit". The doctor may tell him whatever he wishes, but the man usually goes home and examines his own feeling and says: "I am still sick and I know it", because it is he who is harbouring the aches and pains.

That a great endeavour has been made by the Company to eliminate the gas from their smelter smoke, nobody will deny. That a greater one should be made I trust is in the minds of the operators themselves, that they intend to do the necessary research, if it must be done, to give the farmers who seek it, not compensation for the burns but an opportunity to get along with the farming, for they can never feel secure so long as conditions exist as they are.

We have an appeal in from the present arbitration set-up. Coincidentally approximately a year ago we held a meeting here on the first arbitration case, some time in February. That case is still before the Board and the farmer has been waiting a year for the Board to deal with his case. So I think, Mr. Chairman, and members of the Committee, it is not

a satisfactory set-up.

I think personally, and so do my farmer friends who, as I said a moment ago, are not agronomists nor scientists, we think it is feasible to remove every atom of gas from the smelter smoke. The farmers here, like farmers all over the world, wish nothing better than to sow their seed and to harvest their crops and to get along as farmers. All they wish of you, Mr. Chairman and your fellow members, is that you make that recommendation to your colleagues when you go back to the House as you will, and make your report. Before you go back, before you leave our "Nickel City" here, I trust that you will visit the farmers of the area. From knowing some of you, I know that there are farmers on the Committee, and I would ask them to pay particular attention to the wire fences they will see. Under normal circumstances the strand that usually goes first is the bottom one which is subject to the corrosive effect and the wear by the grass. In our area, due to that lower strand being protected from the sulphur fumes, it is the last one to become corroded and to crystallize and break, whereas you will find that the top strand, even though possibly only a couple of years old, will be all corroded and eaten away by the sulphur fumes.

I have a sample here that we are prepared

to back up even with an affidavit, taken from such a fence. However, we cannot bring in the rooms of the farmers' buildings and it will be interesting, when you are out in the country, to see the side of the farm buildings, be they barn or house, that is pointed towards the smelter. You will find it is all corroded and discoloured, whereas the other side looks just like the ones in your part of the country. You will find that the same is true of the fences and the machinery.

In a moment I should like to show you some exhibits which I trust will be of interest. They include the book showing burnt vegetation which our friends from the company mentioned. It contains pictures taken as a result of burns suffered near Consolidated Smelters, and we have got Colourenchrome pictures here that are identical to them. I say then in the name of common sense that they can remove the gas, as was done, -- extract the gas from the smelter smoke -- by Consolidated Smelters at the request of the American farmers. If they can do it, then I say we can do it on behalf of the Canadian farmers, and we should do so.

Mr. Chairman, here is a sample. They are not close-ups, but the farmers here I am sure will understand them. Here is the book I mentioned, and here are samples taken from wire fences.

BY MR. MURDOCH:

Q. Mr. Carlin, could you give us the name of the man whose case is still pending?

A. Yes, his name is Mr. Paul Rainville, and he is here.

Q. Mr. Carlin, how many full-time farmers do you represent who are in the area affected - I should say in the area affected?

A. I would say approximately 1500. There are some 3,000 independent farmers in what we call the Sudbury and District Section.

Q. How many would be affected by it?

A. There would be about 1,500.

Q. Full time farmers?

A. Full time farmers.

BY MR. ELLIOTT:

Q. Do they not work in the mines at all, those 1,500?

A. Yes, a great number of them do.

MR. ELLIOTT: Well, that is what Mr. Murdoch means.

BY MR. MURDOCH:

Q. Yes, that is what I mean, I meant full time farming.

A. Oh, I would say about half that number.

BY MR. ELLIOTT:

Q. How many would that be, then?

A. Roughly speaking, around 800 farmers who live

exclusively from the soil.

BY MR. THOMAS:

Q. This has been a problem, Mr. Carlin, to your members for some time. I see the date of the resolution is the 16th of October, and you had no knowledge at that time that this Committee would visit Sudbury, had you?

A. No, I may say that the resolution is almost identical to resolutions that were passed here in 1943-44. It is hard to change them, there may be a word changed here and there.

BY THE CHAIRMAN:

Q. I was going to ask you, sir, the same question I asked the former speaker. In your resolution you said: "The fumes' gas is known to be a major health hazard and also injurious to animal life"; have you any scientific proof of that.?

A. Well, for instance, sitting right back here are some dairy farmers who tell me if there is a bad attack of gas, the cows which have been grazing on the pastures show symptoms of a drop in milk production by as much as one-half.

Again, there was an ex-prisoner, whose name I hesitate to mention at this time, -- but anyone checking up can find out about it, -- who started an apiary St Charles some time ago and who found that while

the bees gathered honey like any other bees, that the honey was unmarketable and, secondly, that the bees did not reproduce themselves, they were sterile. He even sent to Belgium to get the strongest queen bees he could, but the results were the same, they did not reproduce themselves, they were poisoned.

Now there is no comparison as far as strength of anatomy goes, between cows and human beings and I should think that if the fumes affect milk production, that it must have at least an equally harmful effect on the human anatomy.

THE CHAIRMAN: Any further questions, gentlemen?

MR. THOMAS (Oshawa): Mr. Chairman, I have a little knowledge of metal. These samples of wire fences are about the most practical illustration I have seen up to now.

MR. ELLIOTT: That is rust, is it?

MR. THOMAS (Oshawa): Yes, it says this is about 7 years old and that is the top layer and that is the bottom layer.

MR. ELLIOTT: Well, do they not naturally rust with the weather in any climate?

MR. THOMAS (Oshawa): Yes, but look at the difference in the two. One is the bottom wire and the other the top wire, both the same gauge wire.

MR. ELLIOTT: Is one from one area and one from another?

MR. THOMAS (Oshawa): No, they are both from the same area.

MR. ELLIOTT: Then why should they be different?

MR. THOMAS (Oshawa): He has been explaining about the affects of the sulphur fumes.

THE CHAIRMAN: Gentlemen, if there are no further questions, thank you, Mr. Carlin, for your exhibits here, which will be very helpful in our deliberations.

MR. CARLIN: Thank you very much.

---The witness retires.

THE CHAIRMAN: Is there anyone else in the room who would like to speak to the Committee? If not, on behalf of the Committee I would like to take this opportunity to thank all those who have taken time to appear here on rather short notice and present briefs that were prepared and unprepared. I can only say that the Committee had rather short notice too. As you know, we were constituted last Session in March or April and were interrupted in our work by an election which came along in June, and we were not reconvened

until the Fall, so that we are just getting started, and we do want to present a very comprehensive and far-reaching report to the next session of the House. Therefore, of necessity, we sometimes may appear to be moving along rather quickly, but it is a case of expediency.

So thank you, friends, for coming here today, and as far as we are concerned this meeting is adjourned.

---Whereupon at 3 of the clock p.m. the further proceedings of this Committee adjourned until Friday, October 28th, 1955.

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P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

Dr. Frederick Evis, Secretary.

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VOLUME XIII

Friday, October 28th, 1955.

Sudbury, Ontario.

—0—

R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

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T H I R T E E N T H D A Y .

Sudbury, Ontario,
Friday, October 28, 1955,
9:30 o'clock, a.m.

- - - - -

The Committee re-convened, pursuant to
adjournment.

PRESENT:

Mr. A. H. Cowling, Chairman,

Presiding.

Messrs. Elliott,
 Hon. Mr. Kelly,
 Morningstar,
 Murdoch,
 Thomas (Oshawa)
 Brandon, Q.C.

Dr. Fred Evis, Secretary.

APPEARANCES:

Mr. Felix Bourgeois,

Mr. Elorie Trottier,

Mr. Louis Rainville,

Mr. Thomas Bertrand,

Mr. Walter Kilimnik, Mayor, Town of
Coniston.

Mr. Andrew Deciocio, (Coniston)

Mrs. Andrew Deciocio, (Coniston)

- - - - -

---And the Committee having inspected the International Nickel Company properties including smelters and refineries, a trip was taken throughout the section of the countryside most affected by sulphur fumes, during which the following interviews took place:

FELIX BOURGEOIS, a farmer in Rayside Township, a witness appearing before the Committee but not being sworn, deposes and says:

MR. BELISLE: Tell the Committee the trouble you have had from the sulphur fumes.

BY THE CHAIRMAN:

Q. What damage was done, say to your potatoes?

A. Not so much to the potatoes. The barley was bad. It hits it when it is small and it never sizes up.

Q. Have you put in a claim against the company for it?

A. Yes.

Q. Have you been paid?

A. No, just received acknowledgment.

Q. How about last year, did you put in a claim then?

A. Yes, last year I got \$150.00.

Q. What was that to cover, how many acres?

A. Over 80 acres of barley.

Q. Would you say you were fully compensated, did that pay you for all you lost?

A. It's hard to say.

Q. About how far from the chimneys are you here?

MR. BELISLE: This is roughly 10 miles and it is downwind from the prevailing winds in this district.

BY THE CHAIRMAN:

Q. What about this fence here?

A. It was put up last year. It is rusty already. It is supposed to be rust-proof, but 3 years afterwards it is not so good. In 7 or 8 years it will be finished. The last one was.

Q. How long should it last normally?

A. 15 or 20 years. If the smoke comes when it is wet, it's damaged badly, but when it comes and it is dry, it doesn't damage it much.

Q. What about your oats, were they badly damaged?

A. Not so much oats, but clover and barley it's bad.

---The witness retires.

ELORIE TROTTIER, a farmer in Rayside Township, Rural Route No. 1, Chelmsford, a witness appearing before the Committee but not being sworn, deposes and says:

BY MR. BELISLE:

Q. Tell the Committee, how have your crops been this year, what did the sulphur fumes do to them?

A. I think they are burnt pretty bad this year, and burnt every year.

BY THE CHAIRMAN:

Q. Did you have a claim this year?

A. No

Q. Did you have a claim last year?

A. Yes.

Q. How much?

A. I think it was \$290.00 last year, both farms.

Q. How much did you ask for?

A. I asked \$500.00.

Q. And you got \$290.00?

A. I got \$290.00

Q. Was the crop no use at all, of no value?

A. Yes.

Q. What I am getting at, was the crop all right and you got \$290 00 too, or did you have \$290.00 off the crop?

A. Yes. Well, without the crop, you know.

BY DR. EVIS (Secretary):

Q. Was the crop a complete loss or did you get something for it?

A. That's for damage to the crop.

Q. Yes, but how much value was the crop?

BY MR. BELISLE:

Q. In other words, tell them how many acres you had and the bags of potatoes you had planted.

A. Last year I think it's around 60 acres in grain.

BY THE CHAIRMAN:

Q. Do you think it was a fair settlement then?

A. The barley was badly burnt last year, more than this year.

Q. How about the year before that?

A. The year before that I never go, just write to Mr Ferguson and he send me damage, you know, he never come to inspect damage a year ago.

Q. How about the paint on your house, is that affected?

A. I never see damage on the paint, but the roof.

Q. Do you have a roof that is damaged?

A. Yes. Well, I put stuff a year ago then.

BY MR. BELISLE:

Q. In other words, it was painted a year ago?

A. I painted aluminum.

BY THE CHAIRMAN:

Q. That roof has not been damaged?

A. No.

BY MR. MONAGHAN:

Q. That is a fairly new roof?

A. Yes, two years. It's the metal roof that is damaged.

MR. BELISLE: His home is there, you see. It's the barn roof, not his house that is damaged.

BY THE CHAIRMAN:

Q. Was that roof damaged?

A. Yes, when I paint that is all rust this side. Not on the other side, more on this side.

Q. More on this side?

A. On this side it's all rusted.

THE CHAIRMAN: Driver, drive down there and let us see that, please.

---It was the consensus that there was not much difference observable between the two sides, that pointing toward the chimneys and that on the other side.

BY DR. EVIS (Secretary)

Q. Does it do anything to the tractor or other farm machinery?

A. No, I never see damage on the tractor.

Q. Or any other machine?

A. Any machine that's left outside, she rust quick.

I think the sulphur damage everything.

---The witness retires.

LOUIS RAINVILLE and TOM BERTRAND, Farmers in Rayside Township, witnesses appearing simultaneously before the Committee but not being sworn, depose and say:

MR. BELISLE: Mr. Rainville is a brother of Paul Rainville, the man who has the case before the Board. This is one fellow who was in yesterday.

BY THE CHAIRMAN:

Q. Have you got something here we can see that has been affected?

MR. RAINVILLE: It is a little bit late now for that.

THE CHAIRMAN: Your barn, fences or anything like that?

MR. MURDOCH: Did you have much damage to your crops this year?

MR. RAINVILLE: Well, the smoke was late this year.

MR. BERTRAND: We didn't get heavy gas this year, we got it on the grass, on the clover.

THE CHAIRMAN: How much did you get of what you asked for?

MR. BERTRAND: About half

THE CHAIRMAN: What was the crop?

MR. BERTRAND: Oats and barley, potatoes

THE CHAIRMAN: Were you able to sell some
of the oats.

MR. BERTRAND: Not too much.

MR. ELLIOTT: Did it hurt the quantity or
the quality of the grain?

MR. RAINVILLE: It hurts the quality too.

MR. BERTRAND: Last year it hurt it when it
was that high (indicating) and it didn't sprout again.
And some grain that would normally sprout didn't sprout,
it was a great loss. But this year we got a heavy sul-
phur after the hay was cut. We usually save that for
the cows, when the other pasture dries up.

THE CHAIRMAN: Does it affect potatoes?

MR. BERTRAND: Well, some variety it does,
but the ones we use now it doesn't hurt very much.

MR. DONNELLY (Reeve of Garside Township):
How many acres of potatoes do you put in?

MR. RAINVILLE: I put in about 200 bags.

MR. DONNELLY: How much did you get?

MR. RAINVILLE: We got a couple of thousand
from that.

THE CHAIRMAN: What about cows and the milk?

MR. RAINVILLE: Some. If you get good pas-

ture, you get lots of milk, and all of a sudden they burn that down and you've got no feed.

THE CHAIRMAN: Is there any flavour from the sulphur?

MR. RAINVILLE: We don't get that, but a butcher told me one time that he can tell the difference between the beef that grows here and the beef that grows outside. But he is the butcher, I am not.

DR. EVIS (Secretary): What difference did it make in the milk, does it cut it in half?

MR. BERTRAND: Oh yes, the cow gets lots to eat and all at once you burn it down, you get no milk.

DR. EVIS (Secretary): I wondered how many gallons difference it would make?

MR. BERTRAND: Well, when we get heavy sulphur, they go right down to almost nothing.

MR. DONNELLY: You have to feed them in summer just as you would in winter?

MR. BERTRAND: Yes, we have to buy the feed.

MR. DONNELLY: The cattle still go out in summer time but you have to feed them, they don't get the nourishment?

MR. BERTRAND: They won't eat it anyway, what is left they won't eat.

THE CHAIRMAN: Do you sell most of your produce in Sudbury?

MR. BERTRAND: I think I met you in Toronto last winter, I was down there.

THE CHAIRMAN: At the Parliament Buildings?

MR. BERTRAND: I met Mr Kelly.

THE CHAIRMAN: Yes, I thought your face was familiar.

DR. EVIS (Secretary): Does it affect the chickens laying eggs?

MR. BERTRAND: No, I don't think so.

MR. DONNELLY: You don't have any tin roofs, all shingles.

MR. BERTRAND: No. It is pretty hard to find any damage now. The best time for an investigation like that, if you come in July.

THE CHAIRMAN: We want to have a reason for coming back again, so maybe that is it.

Thank you, sir.

MR. BELISLE: Will you look at the wire fence? The part which is buried in the grass which would normally rust is not rusted at all, and the top wire which normally lasts the longest is badly rusted.

---The witnesses retire.

WALTER KILIMNIK (Mayor of Coniston), a witness appearing before the Committee but not being sworn,

deposes and says:

THE WITNESS: I am sorry it is so dark, but you can still see that it is all sandy here. It blows, and there is no vegetation. We have been after them and got the same old story: "We are trying". That is all INCO land here. When the wind blows this way, they get it here. When it blows that way, they get the sand over that way, you see. The gas is really thick here.

BY THE CHAIRMAN:

Q. Does it drop down from where it is now?

A. Yes, it just depends on how the wind blows. The weather is very, very good today, the smoke is all staying up. When the weather is bad, it all comes down on the houses.

BY MR. ELLIOTT:

Q. What about the other buildings?

A. That is a small stack. That is a substitute, the new one that took the place of the small ones. But in the summer time you could not stand here for 5 minutes when the gas is coming this way, when the weather is bad. If it was windy today, you could not stand here.

BY HON. MR. KELLY:

Q. Are there any individual home owners, or does this belong to INCO?

A. This is all individual home owners here, and those

over there, they only pay \$8.00 a month to INCO, and if they "squawk", they get out. The people here "squawk", because they own their own homes.

BY MR. ELLIOTT:

Q. How long have you been Mayor here?

A. Three years.

Q. A yearly election?

A. Yes.

Q. How big a Council?

A. Six Councilmen.

Q. And how many people?

A. 2,500, 3,000. I could take you all around, but it is so dark now.

BY MR. MORNINGSTAR:

Q. Is it a recent plant?

A. 40 years. This is the nickel capital of the world, and you can see the conditions.

THE CHAIRMAN: Thank you very much, Mr. Mayor.

---The witness retires

MR. KILIMNIK: I would like to bring a lady who is always after me about it, she can tell you the whole story. When the wind blows it is all sand here, that is all you eat in the summer time. There are 300 private homes, and INCO owns the rest.

MR. and MRS. ANDREW DECIOCIO, residents of Coniston, witnesses appearing simultaneously before the Committee but not being sworn, depose and say:

BY MR. KILIMNIK:

Q. Mr. and Mrs. Deciocio, they have been here 8 years. Would you explain to these gentlemen here, I would like to introduce you to them all, but first would you explain to them the condition of the gas and dust.

MRS. DECIOCIO: Well, here in the summer time the sand blows so bad you can't even see across the street. You wash your clothes and take them in and have to wash them again. You have to do them early in the morning or you can't do them at all. The gas is bad too. Even the furniture is damaged, it gets scratched. We have to keep the storm windows on the year around to keep the sand out.

Q. Have you tried sowing wheat, alfalfa, or something of the kind.

MRS. DECIOCIO: I tried to grow some flowers this year, but they won't grow. And even the house plants, if your window is raised, the sulphur will burn them.

MR. DECIOCIO: We went away for a holiday and when we came back we couldn't open the door, the sand was piled so high behind it.

MR. DECIOCIO: You have to put the dishes on

the table at the last minute so they won't fill with sand. And when I want to use my good dishes I have to wash them first.

THE CHAIRMAN: How long have you been here?

MR. DECIOCIO: 8 years.

THE CHAIRMAN: You can "take it," can't you?

MRS. DECIOCIO: What can we do? My husband's work is here, with the railway.

THE CHAIRMAN: Did you know it was like this before you came?

MRS. DECIOCIO: No I didn't know it was like this before I came.

THE CHAIRMAN: Is it getting better or getting worse?

MRS. DECIOCIO: Getting worse.

MR. DECIOCIO: 15 years ago I was here and everyone had a garden, but they let it go too far.

MR. BRANDON: Where does the sand come from?

MR. DECIOCIO: It is all sand.

MRS. DECIOCIO: If I could get out of here, I would go, but where are you going to go? He is working over here at the C.N.R.

MR. KILIMNIK: That is INCO land, and the Company should plant it.

MR. BRANDON: You cannot even persuade it to grow potatoes, eh?

MRS. DECIOCIO: Oh no.

MR. DECIOCIO: I will tell you something, they don't want to do something. People here plants land and grow grass, they just don't want to do it, they put it off. You know the kind of summer we had, after they planted there, the sand was worse.

MR. MORNINGSTAR: Have you a water works?

MR. DECIOCIO: Yes.

MR. MORNINGSTAR: That is really company land?

MR. KILIMNIK: Yes.

MR. MORNINGSTAR: Where the sand comes from?

MR. KILIMNIK: Yes.

MR. DECIOCIO: It is divided into 3 or 4 towns, French Town, Italian Town, Polack Town, English Town. Down here this is all private houses, the other houses belong to the company. They promised they would do it, they never did. These are all private houses.

MR. KILIMNIK: Do you get any gas at all around here?

MRS. DECIOCIO: Yes, we get the gas down here to a certain extent.

MR. ELLIOTT: Is it sulphur gas?

MRS. DECIOCIO: Yes, by the smell.

MR. ELLIOTT: That is the only gas you get from this thing, isn't it?

MR. KILIMNIK: Yes.

MR. DECIOCIO: The kids come home from school, couldn't pass, the sand was so bad.

---The witnesses retire.

---Whereupon at 6:20 of the clock p.m., the further proceedings of this Committee adjourned sine die.

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ONTARIO

P R O C E E D I N G S

OF THE

SELECT COMMITTEE, APPOINTED BY THE ONTARIO
LEGISLATURE, TO ENQUIRE INTO CERTAIN MATTERS
AND LEGISLATION REGARDING SMOKE CONTROL AND
AIR POLLUTION, IN ONTARIO.

Mr. A. H. Cowling, Chairman,
Presiding.

Dr. Frederick Evis, Secretary.

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R. C. Sturgeon,
Official Reporter,
Parliament Buildings,
Toronto, Ontario.

P R O C E E D I N G S

of the

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Mr. E. A. Campbell,	Chairman, Citizens' Committee on Air Pollution and Smoke.
Dr. L. A. Clarke,	Medical Officer of Health, City of Hamilton.
Mr. O. G. Moffatt,	Professional Engineer.
Mrs. Mary Kurchinsky,	Housewife.
Mr. Ralph Biggar,	Representing the Canadian Manufacturers Association.
Mr. Fred Blackwell,	Representing the signers of a petition against the smoke nuisance in certain parts of the city of Hamilton.
Alderman Harris,	City of Hamilton Council.
Mr. T. H. Matthewson,	

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MR. ELLIOTT: Mr. Chairman and gentlemen, Mr. Berry, the Hamilton City Clerk, is our host today and they have graciously given us this chamber to hold our hearing and to listen to any statements which may be made, or complaints which may be offered, and so forth, for the City of Hamilton.

We are grateful to the city for granting us this courtesy today, and we hope the meeting will be carried on to the satisfaction of everyone here.

We do want to "do a job" for the citizens of Hamilton, and we want to be fair, and will give everybody a fair hearing, and we hope that everything we do while we are here will be for the betterment of the citizens of Hamilton.

I will ask our Chairman, to now carry on from here.

THE CHAIRMAN: Thank you very much, Mr. Elliott.

Gentlemen, I think we will bring the Committee to order, and ask the Smoke Abatement Officer for the city of Hamilton if he would like to present his brief. Would you like to do that?

J O S E P H R E I D,

Chief Air Pollution Officer, Hamilton, Ontario, appeared before the Committee, but not being sworn, deposes and says:

THE WITNESS: May I make a slight correction there? I am not the Smoke Abatement Officer; I am the Chief Air Pollution Control Officer for the city of Hamilton.

THE CHAIRMAN: I beg your pardon. I did not mean to give you an erroneous title.

BY THE CHAIRMAN:

Q. Will you please now present your brief, if you desire so to do?

(page 939 follows)

MR. JOSEPH REID (Chief, Air Pollution Control Officer, Hamilton, Ont.): Mr. Chairman and gentlemen, this brief deals exclusively with the problem of Air Pollution in Hamilton and for purposes of clarity is under three headings:-

- (1) The Problem in Hamilton
- (2) The Control Program in Hamilton
- (3) The Recommendations in Providing Assistance or Supplementing our Activities from a Provincial Level.

The Topography and climatic conditions of this region are favourably disposed in relation to the Air Pollution Problem in Hamilton. Across Hamilton Bay to the North there is a gentle rise of ground to the Niagara escarpment, about ten miles distant. From Lake Erie, forty miles to the South there is a gradual slope towards Hamilton culminating in the escarpment which bisects the City running roughly East and West. East of Hamilton lies Lake Ontario and to the West there is Dundas valley, funnel-shaped by the escarpment, and extending for about twenty miles.

Static atmospheric conditions in this area are the exception rather than the rule, they do occur, but are of short duration. Wind data for the past ten years shows fifty-three per cent from the Westerly Quadrant, from the Easterly Quadrant thirty-two per cent with an

average velocity of 9.5 M.P.H. Winds from these two quadrants total eighty-five per cent. From the topographic description it will be recognized that winds from both quadrants provide a purging action.

Under these conditions recycling of the contaminants is not a problem in the general picture. There is an extremely localized area under the escarpment where recycling occurs, but the incidence is low and the effects of little importance.

Regarding atmospheric inversions, data is not available. Conditions occur which seem to indicate their presence, particularly in the Spring and Fall Seasons.

The City of Hamilton covers an area of twenty-seven square miles. The latest figures give 225,685 as the number of population. Located within the City Limits are some 500 Industries. The industrial activities are diversified ranging through basic steel production, chemicals, textiles, soap and detergents, wood products, foodstuffs, secondary steel manufactory electrical products, farm implements and a host of others.

Three railroads service this area. Harbour activities and shipping are of such magnitude as to make Hamilton the third largest port in Canada in volume of goods handled. It naturally follows that from so many and varied industries and services some degree of air pollution could be expected.

The visible aspects of Air Pollution are the ones that generally initiate action in dealing with a problem of Air Pollution Control. Hamilton is no exception in this respect. Visible pollutants are not something that you can kick under a rug or stand in an out of the way corner until you feel like doing something about them. We know that we have a problem in Hamilton and are doing something about it.

In 1950 at the request of the Hamilton City Council, a team of Engineers from the Bituminous Coal Producers Association under the direction of Mr. H. Iammers made a survey of combustion equipment in this City. From their submitted report and the recommendations contained in the report, a By-Law was passed on the 12th of December, 1950 and came into effect on May 1st, 1951.

The organization of the enforcement staff was completed early in 1951 and consisted of the following personnel. Under City Council, a Citizen Committee of three appointed members with a Council Representative as well as the Building Commissioner, Medical Officer of Health, a representative from the City Solicitors office were designated as the Smoke Abatement Advisory Committee. The duties of this Committee are set forth in the Smoke Abatement By-Law No. 6650. They hear and determine appeals from decisions and orders of the Chief Smoke

Inspector and advise both the City Council and the Chief Smoke Inspector on current developments and policy.

The duties of the Building Commissioner give the necessary authority for withholding the issuing of Building Permits for installations not conforming to the principles of good practice under the Smoke Abatement By-Law or of the Building By-Law.

The Chief Smoke Inspector's duties consist largely of the enforcement of the By-Law. The general administration is under his direction as well as assisting the Building Commissioner in inspecting plans and installations for Building Permits, excepting domestic equipment. Other duties are outlined in the By-Law as written.

We have at the present time, two Smoke Inspectors who commenced duties in 1951 and 1952 respectively as the work of the Department expanded. In addition to the Inspectors, a stenographer is employed in the office to handle the usual duties of correspondence, filing and office routine.

The City of Hamilton By-Law No. 6650 respecting the Abatement of Smoke and Other Air Pollution, and the amendments provide allowable emissions under standards defined by the Ringlemann Chart. Smoke of Number two density is permitted for a period or periods aggregating not more than ten minutes in any one hour. Smoke of

Number three density is permitted for a period or periods aggregating not more than six minutes in any one hour.

A general nuisance clause deals with other products of combustion or condition of air pollution such as fumes, soot, dust, cinders to an extent or degree that may be or become injurious to the comfort, property or general welfare of the residents of the City of Hamilton. As can be seen, the By-Law is concerned solely with visible pollutants.

During the first two years that the By-Law was in force, our activities were mainly educational and soliciting the co-operation of industrial and commercial operators of equipment. Since then we have a steadily developing plan of more stringent enforcement. The Smoke Abatement Advisory Committee have heard and determined twenty appeals since the By-Law was enacted. We have initiated five court actions in the past two years and reached a satisfactory conclusion on all to lessen emissions.

In May 1953, citizens in the East End of the City complained of a nauseating gas which permeated their homes. Especially during the night hours and caused some discomfort. The condition occurred several times. Other incidents of a similar nature pointed up the need for more information regarding reactive gases in air pollution control in Hamilton.

About this time also the Smoke Abatement Advisory Committee were interested in finding some means of estimating the worth of their efforts. Industry as a whole had by this time improved. Some of the combustion processes, and in other cases installed collection equipment to minimize emissions, but there were no means of evaluating progress even on a comparative basis.

Mr. Matheson, City Chemist and myself, with the approval of City Council, went to Columbus, Ohio. Mr. H. Ballman who at that time was Director of the Air Pollution Control Bureau of that City was most cooperative in disclosing methods used and procedure followed in the dust fall survey which was then taking place. We visited the Battelle Institute and talked to their Technicians. On returning to Hamilton the same methods and equipment used in Columbus, Ohio were put into operation with only minor deviations.

The Dust fall survey in Hamilton has been underway for two years and we are acquiring good information. A Thomas Autometer was purchased by the Department and with the exception of minor breakdowns has also been in operation for two years measuring Sulphur Dioxide levels in Hamilton.

We also have a portable Sulphur Dioxide Analyser, developed by Mr. Matheson for spot checks in the urban area.

This was a brief resume of what is being done in Hamilton by the Civic Authorities. The larger industries (In Particular) in Hamilton have been most cooperative and recognized their responsibilities.

My personal thanks is to a most interested and helpful Smoke Abatement Advisory Committee. Their technical knowledge and advice have helped to make a difficult job a good deal easier.

In making submissions for assistance from a Provincial Level to supplement a municipal program, certain factors are apparent. It is generally realized that local factors such as climatic conditions, topography industrial set-ups and other factors may justify modifications dealing with emission standards in a particular area.

In our estimation, consideration should be given to Educational facilities, Legislation and to a Technical service. Air Pollution Control is a most complex subject. Contributions from the Chemist, Engineer, Meteorologist, Physicist, and Physiologist are necessary to furnish information on Air Pollution. We have difficult specialized problems, in many cases forming a part of the whole where technical advisory service involving the use of instruments and abstracting information from data to aid in lessening pollution from an individual source would be most helpful.

Corrective measures, other than those of combustion processes, once taken, are of a permanent nature and when a satisfactory performance level is reached the problem ceases to exist.

The enforcement Officers of the Cities of Windsor, Toronto, Hamilton and Mr. H. Belyea, Department of Health, have met from time to time to discuss mutual problems. Changes to General Order No. Section 18, Board of Railway Commissioners have been proposed as one of the results of these meetings. We have reached an agreement with the Railways concerned, and the agreement is well on the way to finalization.

At the present time we are concerned in our respective cities regarding exception of certain industries from a Municipal By-Law under the Ontario Municipal Act. In our opinion, there is little justification for these exemptions, with the improvements in development of collection equipment that have been made in recent years.

Changes to the Shipping Act involving the Smoke emissions from ships using the Harbour facilities are a matter of concern in an enforcement program.

To Summarize:-

We ask that consideration be given by this Committee in recommending the following:-

(1) Educational facilities be provided by Provincial Authorities to Municipalities outlining procedure in setting up a local Air Pollution Control Program.

The General Public be better informed on what could be expected from such a program.

(2) Technical Advisory Service be provided to supplement a Municipal effort. This should provide instruments for measurement and determination of the various pollutants. Under this heading emission standards could be defined in such a way as to be included in a model by-law.

(3) Changes in Legislative Authority dealing with the Ontario Municipal Act and the Shipping Act towards more equitable enforcement of a local by-law.

In conclusion may we hope that the combined efforts and varied interests of all the people concerned in the problem of air pollution will ultimately lead us to the goal of cleaner, purer and more healthful air for the people of Hamilton and the Province of Ontario as a whole.

THE CHAIRMAN: Thank you, Mr. Reid. Before you leave, it may be that some members of the Committee

will have some questions they would like to ask of you.

MR. ELLIOTT: I wonder if we could get a copy of the brief. There are a few points in there which seemed rather important.

BY MR. ELLIOTT:

Q. Mr. Reid, you want the government to set up a department to assist you in enforcing your by-law?

A. I think that would be very helpful. A municipal programme is handicapped by the economy involved. We deal with specific problems of enforcement in our daily work, some of which are of a general nature, and not a few are of a specialized character.

Once you have corrective measures, the problem ceases to exist, and the equipment you have for solving that particular problem is of no further use to you, whereas, with the province dealing with the several cities with varied enforcement programmes, the equipment might be loaned to a city, and they might also supply technical advice toward solving the problem.

Q. You feel the province should take the leadership in setting up an organization to assist the municipalities?

A. That is right.

BY MR. BRANDON, Q.C.:

Q. You mentioned in your brief there had been

some five prosecutions which had terminated to the satisfaction of all parties concerned?

Did it result in fines, or simply the parties being brought before the court with the idea of remedying the mechanism they had in their plants to lessen the emission of smoke?

A. We have never been concerned with taking a large number of firms into court for violation of the by-law. We felt that there should be, on the other hand, more or less gentle pressure.

When we did, we received satisfaction in the particular cases to which I am referring, and the fact that there were convictions against those to whom I referred, plus the fact that the people, as a result of the convictions, were able to lessen the danger of the emissions.

Q. Has it been the practice of your department to lay informations, and then adjourn the matter in police court from time to time to permit a rectification of equipment, to lessen the emission of the smoke, or is the matter processed through to a conviction?

A. Once an information is laid, I feel I will do everything in my power to get the conviction. I am interested in the question of enforcing the by-law, and I think we have punitive measures and clauses set out

in the by-law, and we will invoke them if necessary.

Generally, by the time I am ready to take a court case, people are long past the co-operative stage, and there is no realization of the fact that they are violating the by-law. Under those circumstances, I am after a conviction.

BY MR. ELLIOTT:

Q. You have done everything you can to help them to eliminate the problem, before you take them into court?

A. That is right. I do not think we ever intended to take people into court to get convictions, in much the same way as if you are breaking any by-law once or twice, and are "getting away with it", but the third time you are fined maybe \$1.00, which you gladly pay for the convenience of breaking this particular by-law.

I want to make a court case, so we have supplementary corrective action which can be taken. The fact that we get a conviction is not of a great deal of importance. I am more interested in cleaning up the emissions than getting convictions.

BY MR. BRANDON, Q.C.:

Q. Have you anything to suggest as to what might be done to remedy the smoke condition?

A. In the matter of advice on the operation of

equipment, we do that. We try to improve combustion methods, on a co-operative basis.

We are prepared to informally make certain recommendations as to how they can best operate their equipment.

We do not go into the engineering of installations other than to see that they are satisfactory, both as regards the building by-law and the smoke-abatement by-law. It is no function of the department to do any engineering service.

BY MR. GORDON:

Q. Before new industry establishes itself in Hamilton, is the matter of air pollution taken up with your committee? Have you an engineer who goes in to the plant of a new industry?

A. That is correct. We do approve plans for both new buildings and for alterations in the heating equipment. They must meet certain standards before a permit is issued for the installation, and again after the equipment is in operation, we issue an operating permit.

The operating permit is given only when we feel they have the equipment to operate satisfactorily.

BY MR. BRANDON, Q.C.:

Q. Do the railways in Hamilton contribute much to

your smoke nuisance here?

A Yes, they do. We get good co-operation from them, but we cannot prosecute a railway in our local courts. It is a question of co-operating with the railways, and the railways co-operating with us to bring a satisfactory performance level there.

We do achieve that, but the railways, being what they are, and schedules being what they are, sometimes it is difficult to get a satisfactory performance from them.

Q. Does the same thing apply to steamships, that is, the freighters in the Hamilton harbour?

A. Yes. A steamship moving through the harbour is not under our jurisdiction. They can emit as much smoke as they care to. Some of them co-operate, but others just about ignore it. They might talk to you, but they are not interested in lessening emissions, because I think they are fully aware of the fact that they are protected by the Shipping Act.

BY MR. ELLIOTT:

Q. You feel that something on a provincial level could help you with the railways and steamships?

A. Both are under the Federal government jurisdiction, but I do think that a directive from the province to the government would be helpful, in reaching

some means of enforcement.

Q. Now there are several municipalities all dealing with the railways and steamships individually?

A. That is right.

BY MR. BRANDON, Q.C.:

Q. Have you had any complaints dealing with the matter of emissions from diesel buses' exhausts, or heavy transport exhausts?

A. Strangely enough, I have never had a complaint to my knowledge. I have noticed the condition myself, and I know the day will come when the thing will be recognized as part and parcel of any programme.

Diesel equipment seems to be increasing on the highways and through the cities, and I think they are a contributing factor to the problem as a whole, and I think in the future we will have to have some action in connection with that particular thing.

Q. In connection with that, have you ever designated truck routes the heavy transports must follow, or are they allowed to go through the city at large as they please?

A. Up to the present time, they are allowed to take any route through the city they wish. Naturally, there are certain streets which carry heavier truck travel than others.

MR. ELLIOTT: That is a very controversial point here right now. It is one of the live issues.

BY MR. GORDON:

Q. You mentioned the exemption of certain industries in your brief. I think it should come at the provincial level, that no exemptions should be made.

A. I do not see any harm in putting it in a municipal by-law.

Since the amendments to the Ontario Municipal Act, we have certainly had collection equipment developed which could be used by exempted industries to lessen emissions.

My own personal viewpoint is that if you have one factory with a straight combustion process, you can go in and ask that he instal smoke equipment to lessen smoke or that he can burn a better quality of fuel. In other words, you raise his costs.

Then next door to that industry, is another industry exempted under the Act, and the emissions may be higher, and while he is not absolutely exempted, it is a very cumbersome procedure to bring them to court under the municipal by-law.

BY MR. THOMAS (Oshawa):

Q. You feel if there were no exemptions, the municipal government could take care of the whole situation?

A. I think so.

BY MR. BRANDON, Q.C.:

Q. Have you any brick and tile plants in this area?

A. We have a considerable number. We have three brick and tile plants within the limits of Hamilton, and about six foundry operations in the city of Hamilton.

Q. Do they constitute, in your opinion, a large or minimum contribution to your smoke problem in Hamilton?

A. I would have to express an opinion on that. I think they contribute some portion of air pollution in Hamilton. To what extent, I cannot say. We have not gone into that matter.

The problem in Hamilton has not been fully defined, and I do not know when it will be. But we are not acting on that premise. We are more inclined to take care of the problem before it is defined, and we are not allowing it to develop until you have a high level of pollution, and then try to take steps.

I think it is better to do what you are trying to do toward lessening emissions as you go along, and ultimately achieve a lower level of pollution.

Q. You mentioned a moment ago you had an engineering staff which, more or less, passes on a plant or a

new corporation coming into the area, dealing with the matter of smoke emissions?

Supposing a brick plant is desirous of locating in the Hamilton area; is there any machinery in your organization set up at the present time which would tend to deter that industry coming into Hamilton, if it were to function on the same basis as some of the older plants, as compared with the newer type, where there is no smoke emission at all, or very little.

There are brick plants being built where there is a minimum of smoke emission due to the electrical processes.

Can you say briefly if there is an over-all restriction which can be applied by any of your city departments?

A. We have zoning by-laws, and the Planning Commission is functioning. If the industry conforms to these things, and their installation is made in accordance with good practice, I do not see any reason why they should not be granted a license to operate a business.

I do not think we would have any grounds for withholding that, legally.

Q. If there were such restrictions, do you think it would help the situation?

MR. ELLIOTT: We have an Industry Commissioner looking for new industries, and it is "on the job" and more or less straightens matters out with the department and the city, when he brings them here.

In other words, he does a fair job in straightening out their problems.

With the industries which have come in, in the last twenty years, we have had no problem at all due to the City Commissioner straightening out matters with the industry, before it starts.

MR. BRANDON, Q.C.: That is before the industry locates?

MR. ELLIOTT: Before the industry locates, yes.

THE CHAIRMAN: Gentlemen, are there any further questions? (No response).

If not, we thank you, Mr. Reid, for your brief which I am sure will be very helpful to the Committee in its future deliberations.

Just while we are having the briefs passed around, may I, as Chairman of the Committee, say that my name is Cowling. I represent the riding of High Park in Toronto. I would like to have you meet the other members of the Committee, those who are assisting us in our studies.

On my right is Mr. Elliott, whom you all know, and whom I thank for his kindly welcome on behalf of the citizens of Hamilton.

On my left is Mr. William Murdoch, the member for the riding of Essex South, who, incidentally, is the Whip in the House.

Seated next to him is hon. Mr. Kelly, the Minister of Mines, in the Ontario government.

Next to him is Mr. W. Elmer Brandon, Q.C., the member for York West; Mr. Gordon, the member for Brantford, and Mr. Thomas, the C.C.F. member for Oshawa.

Then we have present, Mr. Harry Belyea, our Acting Secretary, who is an engineer in the Health Department.

We also have Mr. Newbury, representing the Ontario Research Foundation.

Ours is an all-Party Committee, as you probably know, set up by the Ontario government to study air pollution and smoke control, and to report to the next Session of the House.

I also see here one of the other Hamilton members, Mr. "Art" Child, the member for Wentworth. I imagine we will hear from him later.

All of the Hamilton members have been very co-operative, and I know they are interested in this

subject, as it applies, not only to Hamilton, but affects the citizens of the entire province of Ontario.

Mr. Reid mentioned a couple of points which I thought were very interesting and will be helpful as we go across the province.

One was the smoke pollution from our locomotives and steamships. It seems to me some measure of control will have to be taken to allow the municipalities to do something about the coal-burning locomotives.

Mr. Reid also mentioned the fact that Hamilton is one of the great seaports of Canada, and I feel it will be a much greater one when the St. Lawrence Seaway is completed, in a matter of five or six years. At that time, not only Hamilton, but every port on the Seaway must have control over the steamships, because there will be many more of them, and they will burn a great deal more coal.

Those are a couple of the problems which affect cities along the Great Lakes system.

We also have Mr. Campbell with us here today representing the Citizens Committee on Air Pollution and Smoke. I understand he is the Chairman. Perhaps he would like to address the Committee.

---Mr. Reid retired.

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E. A. CAMPBELL ,

Chairman of the Citizens Committee on Air Pollution and Smoke, city of Hamilton, appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. We would be very glad to hear anything you care to say, Mr. Campbell.

A. I do not think I have anything further to say other than what Mr. Reid has presented.

I am pleased to welcome this Committee from the provincial government to our city, and I hope your visit here will effect some relief to the city.

We want to help you in your work, in any way we can.

THE CHAIRMAN: Thank you, Mr. Campbell.

BY THE CHAIRMAN:

Q. What comprises your committee, Mr. Campbell, and what are some of the things you have done in the area? How is your Committee set up? Who is on it?

A. At city level. We operate under the Building Commissioner, Mr. Fred Beale. The Committee is composed of the Medical Health Officer -- I may forget some as I go along -- Doctor Clarke, and a cross-section of professional and chemical engineers.

Q. No electrical people?

A. No.

BY MR. ELLIOTT:

Q. Is there not one Alderman on your Committee?

A. Yes.

Q. He is on the Traffic Committee, and will be here as soon as the Traffic Committee has finished its session.

A. I think so.

BY THE CHAIRMAN:

Q. It is strictly an advisory, voluntary Committee, composed of citizens of the city of Hamilton?

A. Yes.

MR. ELLIOTT: They do a great deal of work in connection with Mr. Reid's activities. I think they were powerful in preparing this brief.

THE WITNESS: I have to give Mr. Reid credit for doing all the work on it, Mr. Elliott.

MR. ELLIOTT: It has been the work of the whole Committee.

BY HON. MR. KELLY:

Q. I notice one portion of the brief, where it says:

"In May, 1953, citizens of the east end of the city complained of a nauseating gas which permeated their homes, especially during the night hours, and

caused some discomfort."

Did anybody follow that up? What comprised it? Does this not call for the story?

A. At that time, there was a new plant in the east end of the city, and we felt they were expelling raw gases into the air. That cleared up in a very short time. It was a problem for about three weeks, and it has not returned since. It was a sulphur dioxide condition.

I do not think we will have any more trouble from that source. It was a new plant and they did not have the equipment to dispose of their raw gases, and had to emit them into the air for a time.

THE CHAIRMAN: Are there any other questions to ask of Mr. Campbell? (No response).

If not, we thank you very much for coming here, Mr. Campbell.

---Mr. Campbell retired.

M R. A R T H U R C H I L D, (M.P.P.)
(Wentworth)

appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Child, I would like to call upon you at

this time, and we will be glad to hear anything you care to say.

A. Mr. Chairman and gentlemen, it is nice to have you in Hamilton. We have here rather an ambitious city. I think, in regard to the question of smoke abatement and air pollution, we are certainly living up to our name of the "ambitious city".

The city has taken cognizance of the dangers, and has taken constructive measures to do something about them.

I think Mr. Reid presented a very excellent brief, and he covered a few of the points I had planned on bringing before the Committee, namely, steamships and railroads. I think those are the ones about which the most complaints are made, particularly the steamships on the beach strip, and a number of the housewives are not very happy about that, and there have been complaints from a number of the men about having to clean their houses too often.

Along this line, I would possibly recommend to your Committee that an educational programme might be in order for all the citizens of Ontario. I do not think many of them are aware of how dangerous this condition could be under certain circumstances.

BY MR. ELLIOTT:

Q. Do you feel a department should be set up?

A. I would strongly recommend that in your deliberations you stress that, and that a department be set up in which the citizens themselves could help.

Q. Something like the Fire Marshal's Department?

A. It is something like Doctor Berry's Department of Sanitation.

In most of the municipalities, I am sure they would welcome some financial assistance as well. It may be that the smaller communities are the reason why more work has not been done up to the present time. This is something comparatively new, as far as the smaller communities are concerned, and I do think more interest should be taken in it.

Q. Do you think the province should provide the laboratories?

A. Yes, and should take the initiative of going out and giving advice to the new industries coming in to the districts.

I think that the Industrial Branch of our Department of Planning and Publicity might well take a hand.

I was pleased to hear Mr. Brandon mention the truck routes. That is a touchy problem, and becomes more so, where the route goes by the hospital.

We think it is within the terms of reference

of your Committee to recommend trucks be barred from going by hospitals. There is a certain amount of consideration being given to having trucking routes set up, and that might be mentioned also by the Committee.

I think the diesels are becoming more and more in use, and on two occasions I have had women call me up saying that the children have been nauseated by the fumes from the diesels. This was in the summer, when they had their ventilation systems open, and were catching all of these diesel fumes, and they could not understand why that should be tolerated on the city's streets.

I think that covers pretty well what I have to say. The railroads and steamships are the two sources of which I hear more complaints. There has been very little mentioned about them so far, but they seem to be more of a nuisance, and complaints are received from housewives about their washings, and from the men who have to keep cleaning the homes.

We are very glad to have you here.

BY MR. MURDOCH:

Q. Did the Advisory Committee of the International Joint Commission hold any meetings in Hamilton on the problem of lake shipping?

A. No.

Q. We know they have held hearings in Windsor.

A. No, we did not have one here, that I know of.

BY MR. GORDON:

Q. You think the reason you do not get many complaints is that the average persons think it is something they have to put up with, and there is no use in complaining?

A. More or less. But in the last two or three years, the weight of public opinion has been more greatly felt, through the Roads Department, and more people are taking advantage of the by-law to have something done.

We felt that the incinerators, some years ago, were quite a headache, but I have not had any complaints concerning them for three or four years now.

Q. You have a good garbage collection system?

A. We have that, but many of the apartment houses have their own incinerators, and burn their own garbage.

BY MR. THOMAS (Oshawa):

Q. That has been stopped, has it?

A. More or less.

THE CHAIRMAN: Are there any further questions to ask of Mr. Child? (No response).

If not, Mr. Child, we thank you for taking the time to come and meet with us, and for what you have

told us. Your remarks will be given every consideration, I assure you.

---Mr. Child retired.

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THE CHAIRMAN: I wonder if Doctor Clarke would care to assist the Committee. He is the Medical Officer of Health for the city of Hamilton. Perhaps he might answer one or two questions from members of the Committee.

D O C T O R L. A. C L A R K E,

Medical Officer of Health, city of Hamilton, appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Doctor Clarke, we will be very glad to listen to anything you may care to say.

A. Well, Mr. Chairman, I am pretty well "behind the 8-ball" because, as you gentlemen have learned in your travels, apart from the few exceptional instances, "air pollution" to date has not been definitely proven, not have any aspects of it been proven to be significant as a health problem.

You are, I presume, well aware of the fatal conditions which existed in two places, one of them was

in London, and, for the moment, I forget the location of the other.

I personally have no doubt that as our information on the subject increases, and as more information is gathered, you will find that this question of "air pollution" is one/ⁱⁿwhich the Health Department could and should be taking a very active part.

But, at the moment, we lack this information, and as a result we are unable to take as active a part as we feel we should, and will ultimately.

To date, the complaints for the most part have had to do with property damage, in which the Health Department has taken no interest.

May I ask a question?

Q. Certainly, Doctor Clarke.

A. Do your enquiries in other centres corroborate what I have just said?

Q. Very much, Doctor Clarke. You might be interested to know some of the recommendations of the medical authorities in California.

As you have already said, the problem there is different to ours. Ours is physical damage and smoke, dirt, fly ash, and things of that kind. That seems to be the first stage; you have the smoke and dirt and dust, and then, as industry increases, and there is an

increase in the registration of motor cars, you move into this other phase of a more poisonous pollution, and then into the stage where actually some deaths were caused, attributable to that.

They said in California that the State Health Authorities -- it is difficult to have the medical people make a definite commitment on these subjects, and I do not blame them -- but they seemed to feel the conditions out there which caused air pollution, they figured, was 50 percent. from the exhaust fumes from motor vehicles, and 50 percent. from backyard incinerators and industry, making up the complete picture.

They felt that the pollution there was a contributing cause to cancer of the lungs. They made that definite statement.

A. I agree with that --

Q. You asked a question, and I am trying to answer it.

A. Thank you, for your answer. This confirms the conversation I had with Mr. Reid and other people regarding the pollution caused by internal combustion motors.

We have in Hamilton about 50,000 registered vehicles. If each one of those vehicles burned one gallon per day, that would be 50,000 gallons of gasoline,

and I feel that the exhausts from the motor cars are an important contributing factor to air pollution. I think I discussed that with Mr. Belyea one day.

Then, also, the exhaust gases from your motor cars are not being discharged 100 feet up in the air, but at knee level in the streets.

As you know, on certain street corners in New York city, the police are replaced at frequent intervals because of the carbon monoxide pollution of the air at certain traffic centres in New York city.

We have done something along the same line at the corner of King and James Streets in Hamilton, but we have not found it to be significant. Nevertheless, it is growing.

BY MR. ELLIOTT:

Q. You feel the automobile, plus possibly the oil-burning furnaces, are about as large contributors as there are? We cannot see it, so we do not know what damage they are doing.

A. No, and we cannot prove it.

BY MR. GORDON:

Q. And you cannot feel it?

A. No, and we have not proven it to date.

BY THE CHAIRMAN:

Q. We seem to be finding out in our studies that

where they have a great number of motor cars and diesel motors, there is no proof as yet that the diesel fumes are poisonous.

MR. ELLIOTT: That is what they told us.

THE WITNESS: Yes, and that is the difficulty.

BY THE CHAIRMAN:

Q. From our studies, we have heard that in many cases the gases you may not see are more detrimental to health than those you can see.

Our studies to date would indicate that the medical authorities have not found anything detrimental to health from the diesel motors.

A. Not in the concentration, as it presently exists.

BY MR. ELLIOTT:

Q. They claim that diesel fumes are nine times less poisonous than the automobiles. That seems ridiculous to me, because I have driven behind trucks and buses and have noticed it, but that is what some members of the medical profession at the University of California told us. I do not exactly agree with that.

MR. BELYEA: That may be in the concentration in the air, but there has been a great deal of work done on diesels in mine work, and underground in the Hydro tunnel at Niagara Falls, and we have done some measuring

in our Department of oxides of nitrogen, carbon monoxide, and the aldehydes.

They get quite irritating. In one case underground, there were about twenty 17-ton diesels operating in one confined tunnel, and some of the workers did actually become a little nauseated due to the concentration of diesel fumes there, which were much higher than on the street.

So while they may contribute to other things outside, in themselves they are not considered too harmful.

THE CHAIRMAN: Are there any other questions to ask of Doctor Clarke? (No response).

If not, we thank you very much for coming here, Doctor Clarke.

---Doctor Clarke retired.

THE CHAIRMAN: Are there any other citizens in the hall who would like to speak to the Committee? We are always glad to hear from any interested tax payer.

R A L P H B I G G A R,

local Chairman (Hamilton) of the Canadian Manufacturers Association, appearing before the Committee, but not

being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Biggar, we would be very glad to hear anything you care to say to the Committee.

A. Mr. Chairman and gentlemen; I am the local Chairman of the Canadian Manufacturers Association.

First, I would like to apologize for not submitting a brief, but we just saw Mr. Reid's brief last night, and Mr. Leithman and I have just returned from Ottawa this morning, and we had no opportunity to prepare a brief on behalf of the Association.

Certainly, our work has not progressed to the stage where we think we could submit anything to you which would be helpful.

I would, however, like to have the opportunity of explaining what we have done, and why.

I am not a technical man, but we have several other gentlemen here who are, and if you have any questions of a technical nature, if I may hide under the table, while others are answering your technical questions, I would be delighted.

About a year and a half ago, we became more convinced, as an Association, that if we wanted to keep our city the nice city we think it is, and make it a healthy place in which to live and work, and make

our employees more healthy, we should do something about it.

So we set up a committee under the chairmanship of Mr. Alex Leithman, who is the Works Manager of the Steel Company, and a very highly-qualified man.

Trips were made to Sarnia and Pittsburgh, to get what information they could, so they could render a report back to us, so we could see what action should be taken, or if we would take any action at all.

We were also fortunate in having the opportunity of consulting with Sir Hugh Beaver, an expert from London, England, and as a result of our investigations, and his advice, it was felt we should do something about it.

We recommended it to the Ontario Research Foundation, which we felt was a highly-qualified organization, which could conduct independent researches and surveys, and we decided we would retain them and pay for them ourselves.

That was not just to secure the information for ourselves, but we have asked Mr. Reid, the Smoke Inspector for Hamilton, to be a member of this committee, so that the information which we hope to obtain will be available for him, as well as any information we might obtain from the Research Foundation, or any

technical help which was afforded, would be available, not only to Mr. Reid, but to all members of our Association, to enable them, if possible, to improve their own particular problem.

It is realized this is a highly-scientific study, entirely different from any other type of engineering work, and we felt that those connected with the Research Foundation were extremely highly qualified.

This entails, on our part, the purchase of equipment amounting to about \$40,000 -- I am speaking in rough figures. It is anticipated it will take at least three years, with the careful gathering of data, and the use of this equipment, in order to properly determine the amount of pollution which is coming from various types of things, not only industry, but the other things you mentioned.

BY MR. ELLIOTT:

Q. Are you going to make a survey of motor cars and private commercial vehicles as well?

A. Our plans are, roughly, that there be set up certain equipment -- what it is, I do not know -- but two mobile units, which shall be placed in various parts of the city.

We think our problem here is currently the

steamboats and the railroad locomotives, and the locomotive problem here seemed to be more than in some other places, owing to the amount of freight which is handled here.

Then they have small dust cans around here. I do not know what they are, but there they are.

A great amount of the work will be done here, but some of the tests will have to be made in the laboratory in Toronto.

We think that to start in on any type of thing like this without first actually determining where this pollution comes from, would not get us anywhere, and even if we cleaned up all our contribution, there are still situations where our efforts in regard to pollution would be wasted. So we felt it had to be thoroughly done, or not done at all.

We have undertaken that work, and we would be delighted if we could be of any assistance from the work we have done, by turning it over to you, and we would welcome any help you could give us. Any money you can save us, or which we can save you, will be beneficial to everybody.

That, gentlemen, is pretty nearly all I have to say. If you have any technical questions, Mr. Leithman is here, and if you wish any further information in

connection with our work, we would be glad to give it to you.

BY MR. ELLIOTT:

Q. This was discussed with the Doctor. Nobody has been able to prove how dangerous the exhausts from motor cars or diesel machines are.

According to my studies of the situation, and what I have personally learned of it, I think the exhausts from motor cars and diesel engines are extremely dangerous propositions, more than we realize.

I think we must find out as soon as possible how much damage the diesel is doing, and prove it to our citizens, so they will have the true picture as to how dangerous the gases you cannot see are to human beings.

A. We are only guessing. Until we buy this expensive equipment and instal it in the proper places, we have really nothing to go on.

Q. That will take two or three years?

A. They expect about three years to break it down.

BY MR. BELYEA:

Q. That does not include the medical studies, such as Mr. Elliott suggests?

A. No. As far as I am aware, that has not been

taken into consideration, except we are working with the Smoke Inspector of Hamilton, who also operates closely with the Medical Officer of Health.

BY MR. THOMAS (Oshawa):

Q. The Canadian Manufacturers Association at this time is mainly concerned with the emissions from smoke stacks?

A. No, that is only part of it. Even if we clean up that end of it, the pollution would still be there to a great extent, and unless it is properly done, and we know what we are talking about, and it is pinpointed more, no great result would come of it.

It does entail a great deal of expensive machinery, and our feeling is, frankly, that unless the Smoke Inspectors would have the privilege of having available for their use the proper type of equipment, it is rather dangerous not to let them have the facilities to know what they are really doing. It is asking them to do something which they have no way of thoroughly judging.

That is why we want to work with him, to do what we can to improve the situation. It will cost quite a great deal of money.

THE CHAIRMAN: We certainly feel, Mr. Biggar, that your group is to be congratulated on assuming such

a financial obligation on your "own hook". As a rule, citizens' groups just do not "go in" for that kind of money.

Of course, as Mr. Child said, Hamilton is the "ambitious city", and is a heavily-industrialized city, and we would like you to --

THE WITNESS: We are as proud of our city as Mr. Elliott or Mr. Child, and we want to keep it clean.

BY MR. ELLIOTT:

Q. You are setting out to do a splendid job. It is something which is long overdue, and we are glad to note that you are now getting around to doing something. I think these things can be of direct help to this Committee, to the province, and to this city, and I am sure they will be.

I am sure by the end of three years, we will be a great deal wiser, and have a much cleaner city than we have today, and I think the efforts you are making will contribute a great deal to that.

THE WITNESS: I think they will, Mr. Elliott.

THE CHAIRMAN: Are there any further questions to ask of Mr. Biggar? (No response).

If not, Mr. Biggar, we thank you very much for coming before us.

---Mr. Biggar retired.

When we were in Sudbury a week ago, we heard

a number of representations, but we did not hear very much from some of the private citizens, and when we went on a tour in the afternoon, several of the people who had attended the meeting previously came to us privately and discussed matters which were important to them.

We would not like anybody to leave this room this morning feeling they had something to "get off their chests", but did not have the opportunity of doing so. So do not be backward. If you have something to say, now is the time to say it, and I know the Committee will be glad to hear from you.

MR. ELLIOTT: Alderman Harris, the Council representative on the Committee, is here now.

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F R E D B L A C K W E L L ,

representing the signers of a petition against the smoke nuisance in certain parts of the city of Hamilton, appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. Mr. Blackwell, we will be very glad to hear anything you wish to say.

A. I have been asked to act as spokesman for the 300 people who signed a petition protesting against the smoke nuisance in the northern end of the city.

We are very pleased to think that interest has now been shown in our petition, and that the machinery has been set in motion to remedy a condition we have in the north end of the city, which at times is almost unbearable.

We, naturally, have the usual complaint, that the women have to do their washings twice on certain days. That, of course, depends on the way the wind blows, and when the wind comes from the southeast in there, we get the full force of what we consider to be deadly fumes.

We have to take our screens out, and we have to close our doors, irrespective of the temperature, because we cannot stand those fumes.

It is only on occasion when the wind is from a certain direction, but we have seen no attempt to remedy a nuisance which has been going on there for quite a few years.

BY MR. ELLIOTT:

Q. It is mostly from coal from the docks?

A. It is from the smelting of various kinds of metals, half a block away.

As we contact people to find out just where they fit in, and how it affects them, we find that the older people are suffering very serious chest complaints, which are aggravated by these terrible fumes we are getting from these smelters.

I am very pleased to see -- and I shall report back to those people who have signed the petition -- that you are taking this up at the provincial level, and I know that Mr. Reid and his committee are doing their best to eliminate that condition.

Q. You have been working with him on it?

A. No. I have attended meetings of the Smoke Abatement Committee.

Q. Oh, you have not been working with Mr. Reid on this?

A. No. We only laid our cards on the table, and stated what our complaints are. We have to admit that we have less noise than we had previously. It seems to me they have put a kind of muffler on these diesel cranes which has eliminated the noise considerably, but there has been no attempt, in my opinion, to eliminate the fumes, that is, by the firm in question.

Now, as I say, it is only on certain days we get it. We had it one day last week. It came along the ground, and you would be surprised to know the number

the people who cough and spit because it gets into their lungs. I do not know whether it is Doctor Clarke's job to remedy that or not. We are satisfied, as the representatives of these 300 petitioners, that in time you will be doing something --

Q. You feel it is this type of gas?

A. It is the fumes which come off that smelting of various types of metals.

Q. Can you see it in the air around your house?

A. It is yellowish in colour, and it comes through there like a cloud.

Q. You can see it?

A. Yes, you can see it.

Q. And smell it as well?

A. You certainly can.

I am very pleased to think the municipal and provincial authorities have taken an interest in this. I do not know whether we are the first people in the city to complain, but we certainly have had grounds for complaint, and I think we are quite satisfied to leave it in the hands of you good people, because we know you have our interest at heart, and will do the very best you can for us.

BY MR. MURDOCH:

Q. Do these fumes affect the grass and flowers

and other vegetation in that area?

A. On certain occasions, they do. I brought samples of vegetation, flower plants, and placed them before the committee a few weeks ago.

At one time, we had peaches in there, a beautiful crop, grown by a lady in there, and there was not one of those peaches from that beautiful crop which was fit for human consumption.

Q. Why?

BY HON. MR. KELLY:

Q. What happened?

A. It is the heavy scent which got onto the peaches, and you just could not eat them at all.

We brought a specimen of a curtain, where it had come from a narrow screen window, and it actually rotted the curtain.

We can produce curtains which have just a bar across the lower width of the window screen. The upper part is, of course, alright.

This is something we have shown as an exhibit.

BY MR. ELLIOTT:

Q. You should have brought them with you.

A. I did not feel like carrying rags in.

And there are peaches, and other types of foliage, which I could have brought in.

At one time, this area was all vacant land, but now it has a dense population, as you can see.

BY MR. MURDOCH:

Q. I presume that has been the case for many years?

A. My own house was built in 1864. I am about the second one from the source of this trouble. I have a neighbour there who has been living in her house for fifty-one years.

Q. The houses were there before the industry came in?

THE CHAIRMAN: That is a good point, Mr. Murdoch.

BY THE CHAIRMAN:

Q. You were there before the nuisance?

A. Yes. I was there before the nuisance, because the office where the nuisance is now is what I sometimes refer to as "my old home site", because where the steel plant is now, I used to raise flowers, and what is now the office was my home, where I raised my family.

. MR. BELYEA: Is that one of the firms exempt under the Municipal Act?

MR. REID: That is right, Mr. Chairman.

BY MR. BELYEA:

Q. Has your group approached the Company itself?

A. We did, until we got "browned off".

BY MR. ELLIOTT:

Q. Did they offer to buy your property?

A. No, they certainly did not. I would be glad to get a cash payment for it, and go someplace else.

We did complain, but what did we get? If you will pardon the expression, I will tell you. They said, "What the hell do you expect us to do, buy you gas masks?".

BY MR. THOMAS (Oshawa):

Q. They are not very co-operative?

A. They certainly are not.

Q. When did you present your petition?

A. This last spring.

BY MR. ELLIOTT:

Q. How long since you made your complaint?

A. About three years ago.

MR. MURDOCH: Mr. Chairman, this is another case where there should not be any exemptions.

BY MR. MURDOCH:

Q. What would you say as regards old people suffering because of this? We found that situation in other places we have visited, that the old people are the ones who suffer from these fumes.

A. The fumes aggravate their condition, that is sure. People who do not enjoy the best of health --

naturally, if they have some chest trouble --

BY THE CHAIRMAN:

Q. Are you bothered with it yourself?

A. Yes, I am bothered with it, but I have had sense enough to keep my door shut, and to spend most of my time around the TV when anything like that is happening.

But there are times when I can go to the windows and I can notice the smoke going up there, and so have other people around there.

BY MR. ELLIOTT:

Q. Do the prevailing winds help you there? And are there days when it comes out in almost a cloud?

A. Yes. When we get a day, it seems to affect the south portion.

BY MR. BELYEA:

Q. How often do you have to paint your houses?

A. I bought the very best paint, the C.I.L., and I put it on last year, and you never saw such a mess in your life. I cannot complain to the C.I.L. about it.

BY THE CHAIRMAN:

Q. The paint is alright underneath?

A. Yes, but it looks like a mess. We have to continually paint it all the time, and it does not

whether you get the best paint on the market, it is affected when these fumes hit it.

BY MR. MURDOCH:

Q. Do the fumes come out of many stacks?

A. They come out of two. Sometimes it looks like nothing but steam which will not affect anything, but then at another time you will see the yellow fumes shooting up, and then, if the depression is low, it seems to sweep out over the roofs, and reaches over the railway tracks, and goes along the ground.

BY MR. BRANDON, Q.C.:

Q. How long has your industry been located there?

A. Oh, I would say about twenty-five years.

BY MR. GORDON:

Q. The plant has been doing it all these years?

A. Oh, not to the extent it is being done now. It has extended recently.

BY MR. BRANDON, Q.C.:

Q. Has the plant recently expanded, say, in the last three years?

A. I would say in the last six or seven years there has been considerably more smelting than there was before.

Q. You say a complaint was made to the local

Smoke Control Officer about three years ago?

A. Yes.

Q. Have there been any complaints since then?

A. Numerous people have called the City Clerk.

BY THE CHAIRMAN:

Q. There were individual complaints, but recently there have been representations made by, as you say, some 300 people?

A. We cannot put in individual complaints, because they do not mean anything.

We decided we would take stronger action, and a petition was drawn up and signed by 300 people, and registered in the City Hall.

Then we were invited to attend a meeting of the Smoke Abatement Committee, and we were quite satisfied to leave it in their hands, because we knew they were all competent people, and would take our interest to heart.

BY MR. ELLIOTT:

Q. You feel you can get some satisfaction, and you hope to get some help?

A. We feel we are going to get satisfaction from the provincial-municipal level, which I understand is in motion now.

BY MR. MURDOCH:

Q. Do you think that higher smoke stacks or

exhaust stacks would relieve the situation?

MR. GORDON: What goes up must come down.

THE WITNESS: I think it would help. In North Bay and Timmins, they have built tremendously high stacks and distributed the stuff away from the cities.

MR. ELLIOTT: They distribute it over a wide area.

BY MR. BRANDON, Q.C.:

Q. You said this Company located in this location about twenty-three years ago; when it located there, did the corporation buy up various residences upon which to locate the plant, or was it vacant land?

You said you had raised your family on the site, that is, the site which now is the office.

Are there people who now live in the area who sold their homes elsewhere so they could live in close proximity to the plant?

A. The houses they live in belong to the Sawyer-Massey Company. They sold them to the Company. There was no offer made to purchase the property.

No one has ever attempted to buy that property down there, and it is almost impossible to sell property down there. People come along, and if they see the smoke, and smell the fumes from the junk pile, they decide to go

someplace else.

BY MR. BRANDON, Q.C.:

Q. Were there industries on that same site prior to this industry locating there?

A. Yes, there was an industry -- automobile machinery. They did not make the machinery on that site. They simply shipped, because it happened the Canadian National came on one side, and the T.H. & B. came up on the other side of the yard, and they used the facilities particularly for shipping.

BY MR. GORDON:

Q. I gather that management does not live in that district, or they would do something about it.

A. They certainly do not.

MR. THOMAS (Oshawa): This seems to be the case of an exemption, and these people are hiding under the exemption which they claim, and I would like to express my disapproval of a company which tells the public "We will run our business as we like", without considering the people at all.

I think this problem should be tackled in a spirit of co-operation. Sometimes co-operation will step into the picture, but I think here it has to be co-operation between the industry and the people themselves.

I think this Company has shown a complete lack of co-operation. Surely they could do something.

MR. ELLIOTT: I think it is one of the cases where amendments should be asked to take care of a situation like this.

MR. REID: That is right. This is an example of what I was referring to when I stated that exemptions are not justified under the Ontario Municipal Act.

I did not ask Mr. Blackwell to come here. He is here of his own initiative, and he certainly is pointing up the need of improvement.

I can understand his feeling of frustration, and why he feels he has, from time to time, been given the "run around".

I never have gone into the matter with him, and I have been trying to produce results under somewhat of a handicap.

THE CHAIRMAN: Are there any further questions to ask of Mr. Blackwell? (No response).

If not, we thank you very much, Mr. Blackwell, for coming here. Your representations will, I can assure you, be given every consideration.

THE WITNESS: I wish to thank you on behalf of my petitioners. We have the utmost confidence that

you will do your very best on our behalf.

THE CHAIRMAN: Thank you, and I would like to say to the 300 citizens who have signed the petition, that we think they have, in you, a very good spokesman acting on their behalf.

---Mr. Blackwell retired.

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THE CHAIRMAN: We have Alderman Harris of the City Council's representative on the Smoke Committee.

If he wishes to say anything, we would be glad to hear him at this time.

A L D E R M A N H A R R I S,

Council's representative on Citizens' Smoke Committee, appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. We would be very glad to hear anything you have to say, Mr. Harris.

A. Mr. Chairman and gentlemen; I do not know why I was called upon this morning. I came down in a listening capacity. Unfortunately, I could not be here for the beginning of the proceedings, but I have been very interested in hearing what has transpired up to the

present time.

Being on the Smoke Abatement Committee, I am naturally interested in the work, and we did have occasion to go into this thing thoroughly, as members of that Committee.

The gentleman who was speaking previously (Mr. Blackwell) came before the Smoke Abatement Committee and from the information which was brought to us, I felt I should pursue it a little farther on my own, strictly unofficially, if you will.

So, on an occasion, I went down to the Company, which seemed to be violating some ordinances -- and I would like to speak of the violations a little later. I wanted to go down to find out precisely what this Company was doing.

So I went there when they were right in the middle of their operations. The Company is moulding copper and brass, and pouring it into ingots, and during this operation is when you can expect to find the most trouble. It seemed to me to be the very best time for me to go down there.

Be that as it may, they were not expecting me. They showed me every courtesy, and took me through and showed me the operations of the plant, and I stayed there for about an hour and a half.

After I had learned what I could, I thought possibly there were some secret operations coming up, which might take place with some frequency, and I thought I might be in a position to see them. However, I did not see anything too exciting, so I went out.

I thought possibly the best thing I could do was to go through the neighbourhood and knock on the front doors, and endeavour to get some information from the people in the neighbourhood, in respect to what Mr. Blackwell, who is the spokesman for the people in that area, had to say. I wanted to see some evidence of what this smoke condition had been, and I was looking for the effects on the grass and flowers and on the leaves of the trees. I did not know exactly what I should expect to find, but I thought I might find there was some evidence of such a condition existing, which had been outlined to us at the meeting, and I felt I would see something.

However, I did not. And when I approached some people, I did not find them too excited. They did tell me that on occasion there was a bad condition. Well, I live in Ward 7, and we have bad conditions there at times. Hamilton is a city of industries. That is why we are the city we are, and being a city of industries, I think we are bound to run into such

conditions from time to time.

I am not saying for one moment that because we have them, we have to put up with them. I am saying that possibly we should take some steps to combat them. But that condition is prevalent.

In going around, I found the grass was green, and the flowers were not too bad, and everything looked fresh and clean.

I did not find out what kind of fuel they were using in their houses, but people did tell me that at certain times the condition was almost intolerable. Granted, when you have a certain condition, it may be something which is unique, and possibly unusual.

We have no control over the weather.

But, be that as it may, in going down there, I found Mr. Blackwell -- and I think he will admit what I say is the truth, and I think these were his exact words -- he told me -- Mr. Harris, who is right here? They either cannot or will not exert any efforts to do something about this thing.

I like to know both sides of a story, and perhaps they should be given the opportunity to say something about it. I do not think they should be unnecessarily pressurized.

So, Mr. Chairman, as I say, I went down there.

There is no money for me in doing that. The amount of money I receive for a year's pay is received, and whether you do a sincere job or an insincere job, is beside the point.

I decided to go down and find out the situation, and I met Mr. Blackwell, and he tells me that he believes Mr. Levy has done something to try and rectify the situation. I would like that to be corrected, if I am not telling the truth.

Mr. Levy has done something to eliminate noise, and we are, of course, interested in noise. We are interested in anything which may affect the health of our people.

If this Company is making some efforts, and if the results are not 100 percent., is that any fault of any company, as long as they are making the effort?

This air pollution control matter is in an entirely new field, and we can spend a terrific amount of money on it. And I feel that the city of Hamilton should be in a position to spend a certain amount of money to keep the city we have here. It belongs to us.

Mr. Elliott came forward with a statement in the papers that we have a serious problem here. I was glad to see somebody taking cognizance of that. We do not start until the horse runs out of the stable,

but we should do something now, owing to the fact that, as Mr. Elliott said, we can foresee the possibility of one day in seven having a fatal amount of this stuff in the atmosphere. Although I think that may be "spreading it a little thick", that is the only way that something can be done, and we should not wait until something actually happens. Sitting back will accomplish nothing.

So perhaps Mr. Elliott has brought the people out of their apathy in the hope of getting something done.

I think he has been quite sincere, and in that same sincerity, I think he will go back to our provincial government and ask for the kind of money we need to do a job here, because we have not the money in City Council.

I think you will find in City Council, we get a very insignificant amount of money to educate the people. That is the only way we can do it.

I think manufacturers and people in apartment houses have agreed that all these things are contributing factors, and anything we can do to clean up the air here will be helpful.

Now, how will you educate the people? It costs money for newspapers, radios and TV's, and we just

have not got it.

I think you are aware of the attitude our Council took. Our taxes are high, and where we speak of education, it is not necessary in schools just to learn the A.B.C.'s. I think we should give some education in regard to a cleaner city in which to live.

If there is to be education in regard to pollution, it will cost money. The province makes a grant to our schools, and there is no reason that I can see why the provincial government should not make a grant to the city of Hamilton to cope with this situation.

I do not need to tell you how serious it is, because others have already done so; nevertheless, I wanted the opinion of the people in the district. Mr. Blackwell, who appeared here, gave an outline of the conditions as he sees them at the present time, but we have no way of ascertaining just how bad the condition is, because the government has not seen fit to establish any figures of the quantity or degree of the pollution, and how the air might be, shall we say, cleaned, and beneficial to the health of the people. That must be established.

I believe it was presented in a brief this morning. I was not here to hear Mr. Reid, but I

understand he presented a very good brief, and I hope the Committee of the Council will be doing something which will be pretty decisive, and that we will have standard established whereby this city of Hamilton can be 75 percent. or 80 percent. or 90 percent. clean.

Until we establish that, I do not know how you say that anything is filthy, or is anything which might be injurious to the health of the people.

That is my feeling on the matter.

As I say, I did not come here prepared to talk, but rather to listen. A person could speak for a long, long time on this matter.

I might just add that this Committee has been working, and I hope as a result of your visit here, you will go back to your hon. Minister, and suggest that certain legislation be passed so that ultimately not only the city of Hamilton, but every city in the province, may be benefited.

BY THE CHAIRMAN:

Q. If you know, would you give us your view? You are in favour of bringing all industry under the Municipal Act, without any exemptions whatsoever?

A. One at a time, after certain standards have been established, and I think they should be established by the province. I feel, as I pointed out a few moments

ago, -- let us put it in the terms of a simile; the law says you can go down the highway at 50 miles an hour, but if you go 60, it is a violation, and you can be penalized under the law.

I think the same thing should be set up by the provincial government, whereby certain standards would be set, and if a company was operating within the minimum of the requirements, there is nothing wrong. Then people in that area will have a condition which is acceptable to the community. That is the way I see it. I am not an engineer, but it seems to me we either should have something we can tolerate, or we should not. If it is injurious to health, something must be done. But if it is, prove that it is. There is no sense in expecting too much from people who are running an industry and supplying jobs for labour.

We might proceed up to the point where it is something we can condone. We cannot have Utopia, but we can get something which will be acceptable, and that has to be established by the people with the money. I am speaking now of the provincial government, the people with the type of trained men who can do the job.

I think you will find as you go on, that ultimately our Federal government will help us.

BY HON. MR. KELLY:

Q. You are speaking of contributions from various

governments; what would be your thinking along the line of receiving contributions from industry which creates this condition?

A. Industry indirectly is paying to the government to do something, up to this point. From this point, possibly the government has not sufficiently studied this matter in order to take the proper course of action.

I think at this time our industries make it possible, through the medium of indirect taxation, to make their contributions which we, from what is available in our coffers, could not find possible.

Without industry, I think you will agree we would be in a pretty fix.

Q. I think we are getting rather out of our field, when we get into the taxation questions.

A. You brought it up.

BY MR. BRANDON, Q.C.:

Q. Mr. Harris, dealing with the matter which Mr. Blackwell raised pertaining to this particular industry, and your investigations at the plant: the observations made by Mr. Blackwell -- did they apply just in one or two cases, or were they more or less general?

Will you please confine your remarks to your

observations in that regard?

A. I think at the time Mr. Blackwell was speaking, he was speaking from his knowledge from association with the people who live in his area.

I do not like to back track, but I notice in the remarks Mr. Blackwell made, that at no time they had a group -- I do not know whether it was three years ago or four years ago or five years ago; I do not know when it was; whether it was last year or possibly the year before. That I did not ascertain.

But let us say three or four years ago, certain people in the operation did certain things to improve conditions, and possibly would improve them to the point where now they have not that same effect.

I know Mr. Blackwell did not say it was today, but three years ago, and there were certain things in many fields which were not satisfactory, and perhaps which might be improved by now.

To answer your question, when speaking in regard to meeting Mr. Blackwell, I feel when he remarked about the general conditions, he was speaking still as a spokesman.

The people to whom I spoke referred me to Mr. Blackwell, so I feel he possibly has studied this matter, and has perhaps more interest in it, and is in

closer proximity to that smelting plant, and perhaps is living in one of the houses closer to it, and would be more affected.

Q. From your observation, do you think this Company has so acted that the emissions from their plant are improved, that is, over what they were three years ago, when the complaints were first made?

A. I just came to City Council; I am in my fourth term now. I did not have occasion to go down there, because at that time we did not have any complaints.

It was only in this last year that I was aware -- I cannot speak for the whole committee -- and, as I say, it was only in the last year that I have been aware that this condition has been as aggravating as it has.

I did not go down only once, but I went to the area four times, and observed the conditions, and I may say that we have other places where we have these bad odours, and these emissions which are not visible, and where you get the test of smog.--I am speaking now from what I read -- and this smelly odour, which is much worse than the smog.

We have that not only in Ward 7, but in the summer time, on a real heavy, damp night, where

you could drive in the city -- and I think our Inspector will substantiate my remarks -- and you will find in almost any area of the city, or particularly within the confines of a certain area, where they have these operations, and they can be noticed two miles away, and that indicates it could be simply an atmospheric condition, and not confined to any one area alone.

To hark back; when we speak of buying certain properties; they are rather interested in that. But where are we going to draw the dividing line? Where can we say that up to this point the city is prepared to buy out these houses? We cannot speak of property one block away or two blocks away or three blocks away, because the wind is no respecter of persons or property, and we have conditions which could be relieved in two or three blocks, and in some cases, even a half a mile, where we have specific areas, where you will find this condition.

How are you going to pin-point any particular company?

I have been told, "Alderman Harris, you do not know what you are talking about; you are not an engineer nor an expert; it takes a lot of experience and time to pin-point it down".

It seems they can establish where the truth is.

I am not here to pick on my colleagues, but I would like to ask how you can say how far it will go. It may go just a short distance, it may go halfway over the city, or it may be like Los Angeles, it will go all the way through.

I am hoping to see some action being taken, so that we can do everything we can to benefit the people living in the community, and we cannot be too much concerned with the health question, but something will have to be done to make the conditions such that they can be tolerated, or if not, other things must be done, and I think the provincial government will have to step in and do its part.

THE CHAIRMAN: Thank you. Are there any further questions to ask of Alderman Harris?

BY MR. MURDOCH:

Q. I would like to ask the Alderman, something which is possibly beside the point.

You mentioned that the city of Hamilton could not afford to rectify the problem of air pollution. That is something we hear everywhere we go. As a matter of fact, we have heard this in various cities. I have heard it in Windsor, and although I do not come from Windsor, I read of one municipality where they had collected their taxes for this year up to 94 percent.,

and up to six weeks ago, it was one of the best communities as far as taxes coming in was concerned.

I wonder, before we leave Hamilton, if we could ascertain how your taxes are coming in, and if they are not coming in sufficiently, so as to support your statement that the city cannot do any more than it is doing at the present time.

A, I think in that case, you had better have a report from our Finance Committee, or the Board of Control. I think they would be the proper ones to describe our ability or inability to meet this situation.

I think the Board would be in a better position to give you something in writing, if you so desire.

I am sure the Board could not only convince you, but I imagine all of your Committee, that Hamilton is not in a position to grant the kind of money which would be necessary to go into this with a proper programme, whereby we could accomplish something ourselves.

Q. I was interested in the taxes, to see how they compared with the city of Windsor.

A. Speaking tax-wise, there is no possibility of measuring in Hamilton what the taxes will be next year.

BY HON. MR. KELLY:

Q. To close our little "do", I would like to tell you that the Glidden Paint Company might well be

an example for any city. They have cleaned up their own fume problem by the installation of machinery, and I would say it is a most excellent job performance, and was done locally without any aid from anybody, not even from any government.

That is the point I want to make, when you are referring to this question, that the emission from that one industry has been cleaned up by themselves. They have done an excellent job, and one which I think would warrant the observation of other industries.

I think the Committee who are familiar with it, would "go along" with that statement.

A. Having been appointed to this new committee set up by the C.M.A., I do not think there will be any manufacturer who will try to side-step that obligation. I feel they will do everything they possibly can.

If I have left such an impression that such would be the case, I would like to make a retraction. I do not think I said that, but I would feel that the manufacturers want this city to be as clean as it possibly can. They are proud of it. It is a city which makes industry possible, and they want to do everything they can to make the city beautiful, and that is what I am looking for.

THE CHAIRMAN: Thank you very much, Alderman Harris.

---Alderman Harris retired.

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T. H. MATTHEWSON,

appearing before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. We should be very glad to listen to anything you have to say, Mr. Matthewson.

A. I think there are two things I would like to emphasize in Mr. Reid's brief, which have been brought to your attention by every speaker so far.

One is the necessity of bringing these exempted industries under the authority of the city enforcing by-law, and the necessity of providing a standard of emissions.

In the case of which we are speaking, even if we could demonstrate this company was emitting this offensive material, our present by-law does not provide any standard by which we can authoritatively say they are offending.

In the matter of smoke control organization, there is information for comparison.

But with all matters like metallic oxides, sulphur compounds, nitrous compounds, and the aldehydes, the by-law is so vague as to make it impossible to produce evidence that they are offending against the by-law.

I think you are in a position to authoritatively set up such standards of tolerable emissions of material which may not be considered toxic at the moment, but are, at least, offensive.

We cannot say that one part per million of zinc oxide is offensive, but I do think that adequate facilities could be set up which would be workable and enforceable.

THE CHAIRMAN: Thank you, Mr. Matthewson.

BY MR. BRANDON, Q.C.:

Q. Does your by-law permit the operation of backyard incinerators, or does it restrict them? Probably I should have put it that way.

A. Mr. Reid could answer that.

THE CHAIRMAN: Mr. Reid, would you care to answer that question?

MR. REID: Yes. We have restrictive clauses in the by-law and questionnaires which we use in smoke-abatement work. That is by a working agreement with our Clerk, and the Medical Officer of Health.

We tried to discourage the operation of incinerators. We have an adequate garbage collection system which very possibly will soon be extended. We try to "go along" with this.

Where we have complaints about the operation of incinerators, that is a different matter, and we try to discourage it very much.

MR. BRANDON, Q.C.: How about leaf burning in the fall of the year by the residents? Or do your trucks pick up the leaves?

MR. REID: Our trucks pick them up, and we try to discourage the burning of leaves, or having a fire of any kind.

THE CHAIRMAN: Are there any further questions to ask of Mr. Matthewson? (No response).

If not, we thank you very much, Mr. Matthewson, for coming before us, and what you have told us will be given careful consideration.

---The witness retired.

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O. G. M O F F A T T,

Professional Engineer, appearing before the Committee, but not being sworn, testifies as follows:

BY THE CHAIRMAN:

Q. What would you like to say to us, Mr. Moffatt?

A. I would like to speak briefly on the point of setting up machinery which you are apparently considering. The point is you should only set up machinery which is capable of defining when excesses are being created.

In our own committee work, I am very insistent they should not attempt to analyze the problem and propose a cure for any plant or stack, whatever it may be. That is extremely complicated, and gets into manpower and engineering staff, which I do not think the province of Ontario nor the city of Hamilton will wish to take on.

To give you an example of our committee's work today -- and it is one case about which you have been speaking; they have instructed us, and would like very much to have us tell them what will cure their trouble. They themselves have spent a little bit of money on devices which they hope will do the work, but it has not yet done it. The fact that we say, "This is the thing to do" eliminates it from further prosecutions.

So the only point I wish to make is that you set up standards, and then engage staff enough to see that the standards are not being exceeded.

It is important that people with problems should bear the onus of taking on staff, or getting assistance to cure their own problem.

BY MR. BRANDON, Q.C.:

Q. Apropos of your remarks, do you not think that the matter of weather conditions locally situate would be of importance?

For instance, if the government set a standard which was applicable from Windsor to the Quebec Border, and north as far as James Bay, would that be feasible?

We have heard today about certain processes which cause the fumes to be obnoxious at certain times.

You might have a condition in Sudbury where it would be obnoxious, whereas in Hamilton it might not be.

Do you not think that the local municipal level is the proper authority to define for an area, rather than the large, magnanimous basis, such as the province?

A. No, I think it should be done centrally, to set the standard, with the men who have nothing personally at stake, and that we should rely on certain men, who can get at the source, and follow such a standard. That is, a general standard is what I think should be arrived at.

You can break that down to three or four clauses, such as combustion plants, within certain processes, industries, and establish that as the maximum,

that is, the maximum amount which may come out of a particular stack.

BY MR. ELLIOTT:

Q. You can measure the excess quite adequately?

A. Yes. Mr. Belyea can speak on that point.

MR. BELYEA: It cannot be measured easily but it can be measured.

BY THE CHAIRMAN:

Q. On the other hand, Mr. Moffatt, you propose that the provincial government create the standard, and the municipal government sees that it is adhered to?

A. Yes. Standards have to be created by people who know the situation, and know the standard that is best, with the apparatus available. They must know the apparatus.

THE CHAIRMAN: That is clear enough.

Are there any other questions to ask of Mr. Moffatt? (No response).

If not, we thank you very much for coming here, and we will consider what you have had to say to us very carefully.

---The witness retired.

THE CHAIRMAN: Is there anybody else in the room who would like to speak to the Committee?

M R S. M A R Y K U R C H I N S K Y,

housewife, city of Hamilton, being called before the Committee, but not being sworn, deposes and says:

BY THE CHAIRMAN:

Q. We would be glad to hear anything you have to say, Mrs. Kurchinsky.

A. Well, we are in a really tough spot.

Q. Are you one of the signers of the petition?

A. Yes, I was. Only the peaches come and go, but our health, when it goes, it never comes back.

Mr. Harris said he went around the factory or the refinery, or whatever it was. It seems to me that we who have lived there all our lifetimes, do not know anything, but Mr. Harris knows it all in about an hour or an hour and a half.

If Mr. Harris came and lived with it, as we do, it would be a different story altogether, but believe you me, gentlemen, he does not want to live there.

We are in the neighbourhood of the Steel Company, and are having no trouble from that site at all.

Then there is the Canadian Smelters on Macy Street, and no trouble there, and across the way is the American Can Company, and we have no trouble.

The one which was mentioned this morning is the one which is bothering us.

Q. Do they work twenty-four hours a day?

A. Yes. It is going all day, and when they turn the shift over at night, I am sure Mr. Harris would not like it, and when it comes from the smelter at night, it makes you sick at your stomach, and your curtains all get rotten, but that is not everything. I do not think Mr. Harris would like to have that one bit. That hurts me.

We have been up here three times, and every time we got a "kick in the teeth".

We were here once about the noise, and their spokesman walked out on us. We came up here to the Smoke Abatement Committee on the 8th of September, and we got the same thing.

I ask if you think anybody can come down there for an hour and a half and see things better than those of us who are living there day in and day out. We are there every single minute of the time, and we know what we are talking about better than someone who comes down there for an hour and a half.

We cannot call the inspectors to put the smoke down. When we call one, when it is really bad, by the time the inspector comes, everything goes down just as if

somebody had warned them.

We had a Mr. Hall in there, and there was something that looked like a horseshoe with a cover on it, and it was all covered up, and if he was here, he could tell you a lot of what the trouble was.

Mr. Harris is living in a clean place. He does not know what it means to hang the washing on the line and have it get all dirty.

ALDERMAN HARRIS: I think the lady has a wrong impression of my remarks. I did not say they should be condoned.

Unfortunately, I cannot afford to spend a week of my time. I was down on four occasions, and on the occasions I did go down there for an hour and a half at a stretch, I did not see the conditions that they are pointing out.

I did not say they should put up with the condition, but they say it is a continuous condition, and the times I was down there, I did not see it.

I hope my remarks have not been misunderstood. I say something should be done about it, and just because I was not there all the time, because I could not afford to be, I do not say that nothing should be done about it.

I think my remarks were taken wrongly by the

people present.

I thought I should make myself clear. It is not my Ward, and I do not live there. I live in Ward 7, and Ward 7 is a nice clean Ward to live in, but we also have our problems there, and we want to do as much for your ward as for our own.

THE WITNESS: I know we all have our troubles, but you do not have the dirt as we have it at our doors.

ALDERMAN HARRIS: Mr. Chairman, I feel that possibly is where an explanation should be made.

THE CHAIRMAN: Thank you.

THE WITNESS: I believe that will be all for us.

BY MR. BRANDON, Q.C.:

Q. The condition with regard to the peaches; did it happen in 1955?

A. This year.

Q. Did it happen in 1954?

A. We did not know what it was.

Q. Did you ever notice it before 1954?

A. I did have four trees in my yard, and everything went away. I have carrots and beets, and everything is washed by the rain, and if you come when it is a clear day, and the wind is in our direction, you will have a different story altogether.

Q. You feel that with the wind from a certain direction, that condition prevails -- the condition of the peaches and vegetables?

A. We have been there seven years.

Q. You have been living there seven years?

A. Yes.

Q. Was this plant there when you moved there?

A. It was the Sawyer-Massey Company, but he was not doing what he is doing now. He started it about the time we moved there.

Q. You spoke about the curtains deteriorating, and the clothing becoming dirty: how long has that prevailed?

A. All this summer.

Q. This is the first year you have noticed that?

A. Yes. The third time I washed my curtains, they all went to pieces. It made a big hole in the centre.

Q. 1955 was the first time you noticed that?

A. Yes. And there was a great deal of smoke in there.

We asked Mr. Reid to stop it, and when he came, he made them put it down.

Now, it is really terrible. It is not funny.

Q. Does that condition prevail every day?

A. Every day.

Q. How many times a day are you flooded with fumes?

A. With the direction of the wind. With an east wind, we all get it.

Q. I understood you to say the plant is operating day and night?

A. Yes.

Q. Do you have the same density of fumes all day and all night, or do you have relief periods when you get fresh air, so to speak?

A. When he is changing the hot plates, then the smoke stops, and we get a little relief, but when the heat goes up, we get the smoke again.

THE CHAIRMAN: Are there any further questions to ask of Mrs. Kurchinsky? (No response).

If not, we thank you very much for coming here and telling us your story.

---The witness retired.

THE CHAIRMAN: Is there anybody else who would like to appear before the Committee?

If not, we have received a very interesting letter from a resident of Hamilton.

By way of explanation, I should say that the

three major motor car manufacturers are experimenting right now to develop some inexpensive method of eliminating the carbon monoxide from the fumes coming out of motor vehicles.

They hope to get something in the \$5.00 to \$20.00 range, which you can hook onto the mufflers, and eliminate some of these fumes.

They are doing some experimental work along that line in California.

I will ask Mr. Belyea to read the letter we have received.

MR. BELYEA: This is a letter addressed to Mr. Cowling, and reads as follows:

" 9 Walnut St. S.,
Hamilton, Ontario,
Nov. 2nd, 1955.

Mr. A. H. Cowling.

Dear Sir:

As you are Chairman of Ontario's Legislature Select Committee on Smoke Control and Air Pollution, I take this opportunity to advise you of an attachment I have made to connect with the exhaust of cars and trucks. This is not just a wild idea, but I have shown it to a Mr. Reid, of the head of smoke control, of the city of Hamilton, who is an engineer, and he said it was

a very good idea. He referred me in turn to a factory in Hamilton and they studied it and found it very good, but from the industry point of view, they would not handle it as no sale would come of it because the public at large would not buy anything that would not add to the driving or appearance of the car (they at large do not care what comes from the exhaust). Before I go any further, I will tell you that this attachment mixes air with the exhaust in a chamber and when it goes to the final exhaust to the air, it is almost pure air. This idea can also be applied to factories on a larger scale with the aid of a motor. I am under the impression this is a large answer to your troubles and the public at large, but I myself cannot go any further with the proposition as I am just recovering from a heart attack and am not allowed out of the house by my doctor for another 3 weeks. If you would be interested and could send your M.L.A. for Hamilton to see me, I would be pleased to explain it to him and he could in turn bring it to Toronto for your study and solution.

Yours respectfully,

(signed) 'Percy Mallett'. "

THE CHAIRMAN: Thank you. We have appointed Mr. Elliott to visit this gentleman, and get all the information.

Would you care to comment on it, Mr. Reid?
He mentions your name.

MR. REID: I do not want to go into a lot of technical details. It is the most ingenious arrangement I ever saw.

If there is any benefit from it, I may say it is a device which diffuses air just prior to emission at the exhaust, about three feet from the exhaust.

What material benefit there would be, I do not know. I do not think anybody does.

The man was so "sold" on the idea, that I did not have the heart to tell him what I really thought.

Incidentally, I know it is nearly time for adjournment, and I would like to invite you and the members of your Committee to come with me down to the basement of the City Hall, where I have a little laboratory display. It will not take too long. I would like to let you see some of the things we are doing there.

THE CHAIRMAN: Thank you, Mr. Reid.

Friends, if there are no other deputations, we thank you very much for the many contributions to

our studies on air pollution and smoke control. I know they will be most helpful.

We will adjourn the meeting now, and I understand will reconvene at the Sheraton Connaught Hotel, for luncheon.

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---Whereupon the hearing adjourned at 12:25 o'clock, to reconvene at 1:00 o'clock in the Sheraton Connaught Hotel, for luncheon.

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---The Committee was entertained at luncheon tendered by the City of Hamilton.

PROCEEDINGS AT THE LUNCHEON

MR. GORDON: Lord, we thank Thee for this food, and we bless Thee who hath provided for our needs.

We ask it all in Thy name.

Amen.

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---Luncheon was served.

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HIS WORSHIP MAYOR JACKSON: Gentlemen, this has been a very friendly gathering at this luncheon, and I can assure you that it has been entirely social.

I am very pleased on behalf of the City

member in the group of six on our Parks Board, and they are studying the problems in connection with our parks. Judge Schwenger is the Chairman, and is giving freely of his time. There are several businessmen, Mr. Amy, of the Royal Bank, Mr. Finn, the British Consul, and two or three more who were spending four hours -- for what? Not a nickle of pay. They do not even get their expenses. They are people interested in the welfare of the city, and the welfare of Canada.

We do not separate ourselves here. This is not Hamilton; this is Canada, and what we will do applies all over Canada.

And that is the situation you gentlemen have faced this morning in connection with our Smoke Abatement Committee, which gives of their time and service to try and alleviate or solve this problem. It comes up -- I do not know whether any of you heard me over the air on Sunday night at ten o'clock -- in a different fashion every week in Civic government, but all these things go back to lack of planning in the past. I was speaking of what our civic problems have been, and for six years, a good part of our time has been spent in trying to correct things which happened years ago, perhaps innocently. People did not conceive what the city would be like. We did not believe we would have the industry we have today.

to welcome this Parliamentary Committee under the guidance of Mr. Cowling. I do not know what Mr. Cowling has to do with it, but we are very glad to have him here today.

I do not know very much about smoke control. I will have to give way to your expert, Mr. Robert (Smog) Elliott. (Laughter).

This morning, I had a lady approach me and say, "I cannot get outdoors; I am afraid to come out on the street, because I am afraid of the smog".

But we do appreciate the problem, and your studies throughout the province. We are organized here. We have, as you no doubt have been told, a Smoke Abatement Committee, supported by some very influential men in industry.

That brings me back to one of my favourite topics, in that Civic government makes us what we are. We all accept responsibility, yet somehow I think the most important function of the city government is the fact that citizens are contributing of their time to work with independent groups such as the Smoke Abatement Committee, the Hospital Board, the Parks Board, and all these different committees.

I sat in on one meeting the other evening from eight o'clock until eleven, and I was the only elected

which were done in the past, so in the next twenty-five years, people will not say, "Why did not the Council in 1955 do thus and so".

It is a big problem of Civic government to correct the mistakes of the past, and try to avoid mistakes in the future.

We had one last week in connection with the burning of combustible material throwing out gases which were disturbing the residents. You have probably the same situation in Toronto as we have here, and in other places in Canada, that is, industries where residences should be, and residences where industry should be, and we are trying to untangle the "mess", and that is a problem which is very difficult to solve.

I want to repeat a word of welcome from Hamilton on behalf of the citizens of this city. We are delighted to have you here, and we hope you will be successful in your researches and investigation, and that something will come of it, which will lead to a correction of what has taken place in the past, and improve things for the people in the future.

I have no stories to tell you, and I will not talk about "smoke abatement", because I do not know anything about it. I do not know what the answers are, except at the Board meeting last night, we arranged for

spots for two of these observation stations, one on the mountain and one in Gage Park, but you can rest assured we will give you every co-operation in your studies of the problem here.

MR. COWLING (Chairman): Thank you, Mr. Mayor Jackson, and, through you, the members of Council. We are highly honoured you should take time out to welcome us and speak to us today. However, that is something we have always come to expect in the ambitious city of Hamilton.

I will call on the honourable Mr. Kelly, Minister of Mines for the province of Ontario, and a very honourable member of our Committee, to say a word at this time.

HON. MR. KELLY: Your Worship, Mr. Chairman, and gentlemen; I was impressed as a member of this Smoke Control and Air Pollution Committee, with the highly-technical personnel involved in the various deliberations which we have had.

It would appear that the Federal government has jurisdiction over railways, canals, steamships and so forth. We have jurisdiction over smelters and some other things, and the municipalities have jurisdiction over the smoke producers.

We cannot deal with the problem of controlling

the air or streams, and I think we need sound legislation, as it is one of those things which calls for co-operation amongst all of Canada.

To put a simile, we might get back to this "do-it-yourself" craze which is sweeping the country today. That can be confusing, because the story is told of one of these "do-it-yourself" people who repaired his wife's electric blanket with an element from a pop-up toaster, which had the wrong effect altogether. (Laughter).

Dealing with technicalities, may I say that our good friend "Joe" (Mr. Salsberg) from St. Andrew, said in the House, on my appointment to my present portfolio, "We have taken Gemmell out of the Mines, where he was very much at home because of his early training, and put him in Lands and Forests, and we have taken Kelly away from a spot where he knows something, and put him in Mines, about which he knows nothing." (Laughter). "They have simply taken a 'bushwacker' from a lumber company and put him in Mines, where he knows nothing".

I did not answer, but I thought, "Joe, you are just about right". (Applause).

In this little portfolio over the last few years, I have dealt largely with technical people, meteorologists, metallurgists, and now smog control,

and I will admit I am just a little bit confused, so I will take this opportunity of telling this story.

---Not reported.

Gentlemen, this Committee, as the Chairman has said, is non-political, but it is trying to do a job. Some people think perhaps we are a little over the line ahead of the puck, but if you had been in some of the localities in which we were, you probably would not think we were far over the line.

Planning has been needed, and is needed, both in water and smoke.

We wish to thank you, Mr. Mayor, and through you, your Council, for your courtesy, and on behalf of the Committee, I would like to tell you that we appreciate the hospitality and consideration you have shown us.

We thank you very much. (Applause).

HIS WORSHIP MAYOR JACKSON: Thank you, Mr. Minister.

Me. Kelly talked about an average man connected with air pollution, for which he is not prepared, sometimes with unexpected results. I do not know whether I can tell you the story that Mr. Mooney, of the Mayors Federation, told

us about a dog.

Mr. Mooney was a Director of the Mayors Federation, and was telling a story of two hunters who came up from the States, and went to the wilds of Quebec, and they went to a certain place recommended to them, and made all arrangements, and hired a dog to help them in the hunting. The dog was called "Salesman".

They had a marvelous time with wonderful success with the dog "Salesman", which was of wonderful help to them.

Next year they came back to the same location, and they said, "Look, we had a good time with such wonderful results with your dog 'Salesman' and we would like to have him again."

The man said, "You know, we call 'Salesman' by another name now. We call him 'Sales Manager'". The hunter said, "Well, we will take him anyway".

They went out and had terrible results, and when they got back, they were complaining about the results they had with this dog "Salesman", now called "Sales Manager".

The fellow said, "I promoted him to Sales Manager, and now he does nothing else but sit on his tail and bark". (Applause).

I see a gentleman down at the other end of the table, and I would like to hear what Mr. Brandon has to say.

MR. BRANDON, Q.C.: Mr. Mayor, Mr. Chairman, and gentlemen; I would like to reiterate the words expressed by hon. Mr. Kelly, when thanking you, Mr. Mayor, and members of your Council, for your hospitality.

We started off with a couple of yarns, and I believe a couple more will not do any harm.

The story is told of a doctor, an architect and a lawyer, who sat down one day in a hotel, and were talking about the antiquity of their respective professions. The doctor started off by saying that the medical profession was the oldest profession in the world.

He said, "In substantiation of that, I would like to refer you to the book of Genesis, in the first portion, where it is recorded that a woman was created from one of man's ribs."

The architect said, "That is not the beginning. In the beginning, order was created out of chaos, and of course, it was an architect who did that."

The lawyer jumped to his feet, and said, "That is true, but who the hell created chaos?"

That is why I am on this Committee, I think, to create chaos.

Quite candidly, I was saying to the gentlemen at this end of the table, that the more we delve into this matter of smoke control and "Smoke abatement" -- as it may be called in certain quarters -- the more convinced we are that we know less than we did when we started out.

For instance, in Los Angeles, we heard a great deal about "inversion layers", and I never knew what it was until we went there. And we had to go about 4,000 feet up in the air before we knew what "inversion" was, and where it was located.

---The following comments were not reported, by direction of the Chairman.

HIS WORSHIP MAYOR JACKSON: Mr. Campbell, we would like a few words from you.

MR. CAMPBELL: Mr. Mayor, Mr. Chairman and gentlemen; I have no story to tell.

I do want to tell you that we are very appreciative of the support we have from City Council. We have a committee which is composed of many professional men, and a cross-section of others who are not professional. We feel that arrangement works out very well, as it tends at times to keep us in line.

I am not a professional man. I am a practical man from away back, and I do feel we have something to offer from a practical standpoint. Our professional

men keep us pretty well in line, when it comes to policy and to arrangements. As members, they can, I might say, word our by-laws and things like that, which we cannot do so well ourselves, and we feel it is a workable arrangement.

We are very pleased to have this group here from the provincial government. We feel the outcome of your visit with us will help us in our work in the city of Hamilton.

We do our work, as His Worship has told you, without remuneration. We are just interested in the city of Hamilton, to make it a cleaner place in which to live. We do not want too much publicity. We are not politicians, but we do want to do a good job for our city. (Applause).

HIS WORSHIP MAYOR JACKSON: How about a word from Robert (Smog) Elliott?

MR. ELLIOTT: Mr. Mayor, Mr. Chairman and gentlemen; it has been a pleasure to meet with you and to have this party with you today. We must not forget that the Mayor and the ratepayers of the city of Hamilton are responsible for this very lovely luncheon, and the refreshments we had just before it.

We had a very interesting meeting in the Council Chamber, which was made available to us by the

city, through His Worship, and I hope we will accomplish a few things which will be of benefit to the citizens of Hamilton, and to the industries located here.

We, in Ontario, like to see our manufacturers make a few "bucks". There is nobody interested in living, unless he does make a few "bucks". For instance, the Mayor possibly makes a larger loaf of bread, as he is engaged in the bakery business, and he tries to make better cakes, and so forth. The same is true of other manufacturers. So the city is "going to town" under the leadership of our Mayor and his associates, whom I wish to thank again for the hospitality they have shown us today. (Applause).

I am sure we will go from Hamilton impressed with the industrial activities we have seen here, and will be prepared to co-operate with the people of Hamilton, and with their co-operation, we will endeavour to make this a better city in which to live. (Applause).

HIS WORSHIP MAYOR JACKSON: I do not like to boost our city in front of the gentlemen from Toronto. I do hope you will be easy on us on Saturday, so I can go and see the Grey Cup. I am actually on tenter-hooks about this.

We received an invitation to attend the Grey Cup in Vancouver on November 24th, and I wrote back

and said that if Hamilton wins on Saturday, I would be very happy to go to Vancouver, and asked them to get me hotel reservations. They wrote back and said that everything had been taken up since March, but they would put me up at a very fine country club. So I am anxious to go to Vancouver, and I hope you will let us win on Saturday.

This city is growing terrifically. In 1946 or 1947, we had the famous Doctor Filudi prepare some plans of the city. Upon looking at it not so long ago, I noticed he made his plan on the basis of a population of 230,000 in 1975. Actually speaking, we have reached that in 1955.

He also estimated the population of the County at 293,000 in 1975, and we have already arrived at and passed that mark. That will give you some idea of the growth of Hamilton.

That brings me to another serious point. One of the finest things I have heard in a long time was a talk at the meeting of the Mayors Federation in Edmonton, by Doctor Mayo, who has had a great deal to do in connection with the planning of cities, and I assure you it is a big problem. I do not want to get onto them, but I see in the papers that they have their

metropolitan troubles in Toronto.

Doctor Mayo said this, "We went through, in Canada, a depression which ravaged everything" and so forth, and so on. "Surely, as Canadians, if we could meet our problems in those times, surely we have security enough now to face prosperity and growth".

That speech in Edmonton was, to my mind, very impressive in that we had 350 Mayors and Reeves from all over Canada, from Cornerbrook and St. John in Newfoundland, clear through to Victoria, and in meeting these people and talking to them, I found they had the same problem, the problem of growth, and surely we, as Canadians, can meet these problems, and the problems you are discussing today in your group, the problem of air pollution and smoke control, which is a big problem.

I believe it is a problem which can only be solved by such people as you on this Legislative Committee, and voluntary committees like the one on "Smoke Abatement" in the city of Hamilton. It is only by co-operation that we can solve these problems.

We are delighted to have you here. I know you are going down to see something this afternoon from the Bay, and I hope you have a pleasant visit.

As far as the city is concerned, these proceedings are now closed.

I hope you have enjoyed your luncheon, which has been very friendly and informal, and I hope you will continue to have a profitable and enjoyable time in our city.

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---Whereupon the further proceedings of this Committee adjourned until 2:30 of the clock in the afternoon.

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---Following the inspection of the Bay Area of the city of Hamilton, the Committee adjourned to reconvene on Tuesday, November 22nd, 1955, in the city of Detroit, in the State of Michigan.

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